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State of Utah
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

Michael O. Leavitt
Governor

Ted Stewart
Executive Director

James W. Carter
Division Director

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3 Triad Center, Suite 350
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September 26, 1994

Mr. Richard E. Dawes, Chief
Division of Federal Programs
Office of Surface Mining
Reclamation & Enforcement
1999 Broadway, Ste. 3320
Denver, CO 80202-5733

Re: Decision Document, LBA #9 (Federal Lease UTU-68082), Genwal Coal Company, Crandall Canyon Mine, ACT/015/032-93-1, Folder #2, Emery County, Utah

Dear Mr. Dawes:

Enclosed please the Decision Document for Genwal Coal Company's LBA #9 (Federal Lease UTU-68082). If you have any questions, please call me or Pamela Grubaugh-Littig.

Very truly yours,

Lowell P. Braxton
for
James W. Carter
Director

Enclosure
cc: Lowell P. Braxton
Daron Haddock
Pamela Grubaugh-Littig

UTAH DIVISION OF OIL, GAS AND MINING
STATE DECISION DOCUMENT

Genwal Coal Company
Crandall Canyon Mine
Federal Lease UTU-68082
(LBA #9)
ACT/015/032
Emery County, Utah

September 26, 1994

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ADMINISTRATIVE OVERVIEW

Genwal Coal Company
Crandall Canyon Mine
Federal Lease UTU-68082
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PROPOSAL

Genwal Coal Company proposes to add Federal coal lease UTU-68082, which contains 2979.49 acres, more or less. Mining would take place in the Hiawatha seam and would be done as an extension of current underground mining operations.

BACKGROUND

The Mining and Reclamation Plan for the Crandall Canyon Mine, Tract 1, was approved by the Office of Surface Mining in November of 1982 and by the Division of Oil, Gas, and Mining (DOGM) on May 13, 1983. The originally approved MRP consisted of an 80 acre federal lease (SL-062648, Tract 1), a 1.5 acre U.S. Forest Service special use area, and a 1.7 acre fee lease. On February 12, 1987 Genwal was issued a permit from DOGM to add Tract 2 of Lease SL-062648 to the permit area, containing 75.23 acres.

In December of 1986, Genwal was issued federal lease U-54762, containing 256.49 acres. In February of 1988, Genwal submitted a new MRP document in partial fulfillment of requirements for permit renewal. The renewal was subsequently approved on June 14, 1989. This new MRP contained information pertaining to the addition of lease U-54762 to the permit area. A revised state permit which included lease U-54762 was issued on July 31, 1989.

On August 8, 1990, Genwal Coal Company was issued a revised permit which authorized mining a parcel of coal known as the "Right-of-Way". This right-of-way, consisting of 111.5 acres, is not leased but only allows access to two adjoining state leases, ML-21568 and ML-21569. Authorization to mine the state coal leases was given on April 22, 1991 when the permit was again revised to incorporate the leases. The state coal leases are 998 and 640 acres in size and are accessed via the original portals in the Hiawatha coal seam. With the addition of the state leases the total permitted area consists of 2165.42 acres.

An Incidental Boundary Change ('IBC') added approximately 150 acres to the current permit area in this federal lease, approved May 23, 1994. This IBC extended the current underground operations by adding 152.18 acres (approximately 7% of the existing permitted area) to the permit area as an Incidental Boundary Change, bringing the total area permitted to 2317.6 acres. The Incidental Boundary Change is a portion of Federal Lease UTU-68082 which was issued on March 1, 1994. Genwal committed to conduct first mining only in the IBC.

The Crandall Canyon Mine consists of room and pillar operations in the Hiawatha seam.

ANALYSIS

No additional surface disturbance is proposed in relation to the addition federal lease UTU-68082. All mining will be done as an extension of current underground mining in the Hiawatha seam. An Environmental Assessment has been prepared which indicates that mining in Federal Lease U-68082, will have no significant impact to the environment or the public. The Manti-LaSal National Forest required certain conditions, mainly dealing with monitoring requirements, to be placed on Genwal. These special conditions have been incorporated into the permit.

RECOMMENDATION

Genwal has demonstrated that mining of federal lease UTU-68082 can be done in conformance with the Surface Mining Control and Reclamation Act, and the corresponding Utah Act and performance standards. The Bureau of Land Management has approved mining in the federal lease. The Forest Service has also consented with conditions which will be part of the permit. It is therefore recommended that approval be given for the addition of federal lease UTU-68082 to the permitted area and to the currently approved five year permanent program mining permit.

PERMITTING CHRONOLOGY

Genwal Coal Company
Crandall Canyon Mine
Federal Lease UTU-68082
ACT/015/032
Emery County, Utah

December 1, 1993	Genwal submits information, documentation, calculation, etc. to incorporate Federal Lease UTU-68082 into the current mining and reclamation plan.
December 29, 1993	BLM sale of Federal Lease UTU-68082.
February 11, 1994	Genwal submits plans for including a 150 acre Incidental Boundary Change into the permit. DOGM conducts initial review and accepts plans for review.
February 15, 1994	DOGM transmits copies of IBC Proposal to other reviewing agencies.
March 1, 1994	Lease UTU-68082 is effective, lessors are Nevada Electric Investment Company (50%) and Intermountain Power Agency (50%).
March 3, 1994	DOGM sends letter of deficiency to Genwal requiring additional IBC information to be submitted.
March 10, 1994	Genwal submits additional information to complete application for IBC.
March 14, 1994	DOGM transmits additional IBC information to other reviewing agencies.
March 18, 1994	DOGM completes technical review of IBC plan and determines it to be complete.
March 31, 1994	DOGM forwards State Decision Document for the IBC to Office of Surface Mining Reclamation and Enforcement for concurrence and secretarial signature.
May 9, 1994	Genwal submits additional information for completeness for LBA.

May 10, 1994	Genwal submits additional information for submittal to be determined complete.
May 12, 1994	Completeness review sent to Genwal.
May 12, 1994	Federal lease application sent to state and federal agencies.
May 16, 1994	IBC approved by Secretary.
May 25, 1994	Determination of Administrative Completeness.
May 26, 1994	Utah State Historic Office provides comments on the mining plan. No effect upon cultural resources.
June 2, 1994	Genwal submits additional technical information.
June 8, 1994	Division transmits additional information to state and federal agencies.
July 6, 1994	Fish and Wildlife concurrence.
July 8, 1994	Genwal submits additional information, per meeting with Genwal and the Forest Service.
July 11, 1994	Genwal submits additional information.
July 12, 1994	Genwal submits additional information.
July 13, 1994	Division transmits additional information to federal and state agencies.
July 22, 1994	TA prepared by Division with one condition, 42 parts.
August 24, 1994	BLM sends Genwal R2P2 deficiencies.
September 16, 1994	BLM approved R2P2.
September 22, 1994	Manti-LaSal concurred with LBA #9.
September 26, 1994	Decision Document sent to Denver, OSM

FINDINGS

Genwal Coal Company
Crandall Canyon Mine
Federal Lease U-68082
ACT/015/032
Emery County, Utah

September 26, 1994

1. The revised plan and the permit application are complete and accurate and all requirements of the Surface Mining Control and Reclamation Act and the approved Utah State Program (the "Act") have been complied with. (See TA with Stipulations) (R645-300-133.100).

2. No additional surface reclamation is required since the additional permit area will be mined as an underground extension of the existing mine. There will be no new surface facilities (R645-300-133.710).

3. The assessment of the probable cumulative impacts of all anticipated coal mining and reclamation activities in the general area on the hydrologic balance has been conducted by the regulatory authority and no significant impacts were identified. The Mining and Reclamation Plan ('MRP') proposed under the application has been designed to prevent damage to the hydrologic balance in the permit area and in associated off-site areas (R645-300-133.400 and UCA 40-10-11 {2}{c}) (See July 15, 1994 Cumulative Hydrologic Impact Analysis for Crandall Canyon Mine ['CHIA']).

4. The proposed lands to be included within the permit area are:

   a. not included within an area designated unsuitable for underground coal mining operations (R645-300-133.220);

   b. not within an area under study for designated lands unsuitable for underground coal mining operations (R645-300-133.210) ;

   c. not on any lands subject to the prohibitions or limitations of 30 CFR 761.11 {a} (national parks, etc.), 761.11 {f} (public buildings, etc.) and 761.11 {g} (cemeteries);

   d. not within 100 feet of the outside right-of-way of a public road (R645-300-133.220);

   e. not within 300 feet of any occupied dwelling (R645-300-133-220).

5. The regulatory authority's issuance of a permit is in compliance with the National Historic Preservation Act and implementing regulations (36 CFR 800) See attached letter from State Historic Preservation Officer ('SHPO') dated May 26, 1994. (R645-300-133.600)

6. The applicant has the legal right to enter and complete mining activities in the IBC through a federal coal lease issued by the Bureau of Land Management (See attached lease U-68082 effective March 1, 1994). (R645-300-133.300).

7. A 510(c) report has been run on the Applicant Violator System ('AVS'), which shows that: prior violations of applicable laws and regulations have been corrected; neither Genwal Coal Company, or any affiliated company, are delinquent in payment of fees for the Abandoned Mine Reclamation Fund; and the applicant does not control and has not controlled mining operations with demonstrated pattern of willful violations of the Act of such nature, duration, and with such resulting irreparable damage to the environment as to indicate an intent not to comply with the provisions of the Act, see memo to file dated September 26, 1994. (R645-300-133.730).

8. Underground mining operations to be performed under the permit will not be inconsistent with other operations anticipated to be performed in areas adjacent to the proposed permit area. There are no other mines immediately adjacent to the Crandall Canyon Mine.

9. The applicant has posted a surety bond for the Crandall Canyon Mine in the amount of $703,000.00. No additional surety will be required, since there is no additional surface disturbance proposed. (R645-300-134)

10. No lands designated as prime farmlands or alluvial valley floors occur on the permit area (R645-302-313.100) (R645-302-321.100)

11. The proposed postmining land-use of the permit area is the same as the pre-mining land use and has been approved by the regulatory authority and the surface land management agency.

12. The regulatory authority has made all specific approvals required by the Act, the Cooperative Agreement, and the Federal Lands Program.

13. The proposed operation will not affect the continued existence of any threatened or endangered species or result in the destruction or adverse modification of their critical habitats. See concurrence letter from US Fish and Wildlife Service dated July 6, 1994. (R645-300-133.500)

14. All procedures for public participation required by the Act, and the approved Utah State Program are in compliance. See Affidavit of Publication dated May 31, 1994. (R645-300-120)

15. No existing structures will be used or affected in conjunction with mining of the underground right-of-way, other than those constructed in compliance with the performance standards of R645-301. (R645-300-133.720)

Permit Supervisor

Permit Coordinator

Associate Director, Mining

Director

MINE PLAN INFORMATION

Mine Name: Crandall Canyon Mine State ID: ACT/015/032
Operator: Genwal Coal Company County Emery
Controlled By: Nevada Electric Investment Co. (NEICO)
Contact Person(s): R. Jay Marshall Position: Chief Engineer
Telephone: (801) 687-9813

New/Existing: Existing Mining Method: Underground-room & pillar

Federal Coal Lease No(s): **U-54762; SL-062648; UTU-68082**

Legal Descriptions(s);

U-54762 T.15 S., R.7 E, SLBM Sec. 31: SE1/4 SE1/4; Sec. 32: S1/2 SW1/4, SW1/4 SE1/4; and T.16 S., R.7 E. SLBM Sec. 5: Lots 2, 3 and 8. Containing 256.49 acres, more or less.

SL-062648 Tract 1: T.16 S., R.7 E., SLBM Sec. 5: SW1/4 NW1/4; Sec. 6: SE1/4 NE1/4; Tract 2: T16 S., R.7 E., SLBM Sec. 5: Lot 5; Sec. 6: Lot 1. Containing 161.17 acres, more or less.

UTU-68082 T.15 S., R.6 E., SLBM Sec. 25, S2; Sec. 26 S2; Sec. 35 all T.15 S., R.7 E., SLBM Sec. 30: Lots 7-12, SE; Sec. 31: Lots 1-12, NE, N2SE, SWSE. T.16 S., R.6 E., SLBM Sec. 1: Lots 1-12, SW. T.16S., R.7 E., SLBM Sec. 6, Lots 2-4, SWNE. Containing 2,979.49 acres more or less

USFS Special Use Permit(s);

Sedimentation Pond T.16 S., R.7 E., SLBM Sec. 5: an area approximately 150 x 400 ft. adjacent to the eastern boundary of Genwal's federal coal lease SL-062648. Containing approximately 1.5 acres.

Snow Storage and Summer Parking T.16 S., R.7 E., SLBM Sec. 6: SW1/4 NE1/4. Containing .1 acres.

Topsoil Storage
W1/4 Sec. 5 T.16 S., R.7 E., - Stockpile # 1 - .2 acres
W1/4 Sec. 5 T.16 S., R.7 E., - Stockpile # 2 - .2 acres
NW1/4 Sec. 4 T.16 S., R.7 E., - Stockpile # 3 - .5 acres

State Lease No(s);

ML-21568 (East Mountain) T.16 S., R.6 E., SLBM Sec. 2: all Containing 997.69 acres, more or less.

ML-21569 (East Mountain) T.15 S., R.6 E., SLBM Sec. 36: all Containing 640 acres, more or less.

Private Lease

Beaver Creek Description (ARCO Lease) T.16 S., R.7 E., Sec. 5: All that part of N1/2 NW1/4 SW1/4 lying north of Crandall Creek. Containing approximately 1.7 acres.

Ownership Data Surface Resources (areas)*	Existing	Proposed	Total Life of Permit Area
Federal	677.9	2979.49	3399.65
State	1637.69	0	1637.69
Private	1.7	0	1.7
Coal Resources (areas)*			
Federal	675.4	2979.49	3397.15
State	1637.69	0	1637.69
Private	0	0	0

* Note: Prior to the LBA, the Operator had a USFS special use permit for 111.5 acres for an underground right-of-way and additional federal leases were later obtained for the IBC. The LBA incorporates the acreage covered by the right-of-way and the LBA. Therefore the sum of the existing and proposed acreage does not equal the total acreage.

Coal Resource Data	Total Reserves	Total Recoverable Reserves
Federal	36 million	12.7 million
State **	15.5 million	5.5 million
Private		
Total	51.5 million	18.2 million

** Note: 3.5 million tons have been recovered from the state leases, therefore the reserves were decreased by that amount from the original estimate.

Recoverable Reserve Data	Name	Thickness	Depth
Seam	Hiawatha	7' average in minable coal	0'-2300'

Mine Life: 12 years

Average Annual Production: 1,500,000 tons

Percent Recovery: Average 40% and varies from 35% to 50%

Date Projected Annual Rate Reached: 1993

Date Production Begins: 1983 Date Production Ends: 2006

Reserves Recovered By: Underground mining (room and pillar)

Reserves lost through management decisions: Pillars left to prevent subsidence beneath perennial stream and other surface structures.

FEDERAL

PERMIT
Permit Number ACT/015/032

September 26, 1994

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING
355 West North Temple
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203
(801) 538-5340

This permit, ACT/015/032, is issued for the state of Utah by the Utah Division of Oil, Gas and Mining ('DOGM') to:

Genwal Coal Company
P. O. Box 1201
Huntington, Utah 84528
(801) 687-9813

for the Crandall Canyon Mine. Genwal Coal Company is the lessee of federal coal leases SL-062648, U-54762 and UTU-68082, State Coal Leases ML-21568 and ML-21569, and of a fee-owned parcel affected by surface operations. Genwal Coal Company is also authorized to mine a federal Right-of-Way which provides access to the state leases. A performance bond is filed with the DOGM in the amount of $703,000.00, payable to the state of Utah, Division of Oil, Gas and Mining and the Office of Surface Mining Reclamation and Enforcement ('OSMRE'). DOGM must receive a copy of this permit signed and dated by the permittee.

Sec. 1 **STATUTES AND REGULATIONS** - This permit is issued pursuant to the Utah Coal Mining and Reclamation Act of 1979, Utah Code Annotated (UCA) 40-10-1 et seq, hereafter referred to as the Act.

Sec. 2 **PERMIT AREA** - The permittee is authorized to conduct underground coal mining activities on the following described lands (as shown on the map appended as Attachment B) within the permit area at the Crandall Canyon Mine situated in the state of Utah, Emery County, and located:

Township 15 South, Range 6 East, SLBM

Section 25: S 1/2,
Section 26: S 1/2,
Section 35: All, and
Section 36: All.

Township 15 South, Range 7 East, SLBM

Section 30: Lots 7-12, SE 1/4,
Section 31: Lots 1-12, NE1/4, N1/2SE1/4, S1/2SE1/4, S1/2SW1/2,
Sec. 30/31: Beginning at a point 660' North of the NW Section Corner of Section 31, thence East 600'; thence South 5240'; thence West 600' to the West boundary of Section 31; thence North 5240' along the West boundary of Section 31 to the point of beginning. Containing 72.18 acres more or less.
Section 32: S 1/2 SW 1/4, SW 1/4 SE 1/4.

Township 16 South, Range 6 East, SLBM

Section 1: Lots 1-12, SW 1/4,
Section 2: All

Township 16 South, Range 7 East, SLBM

Section 5: SW 1/4 NW 1/4, Lots 2,3, 4 and 8
Section 6: S 1/2 NE 1/4, Lots 1- 4 (NE 1/4 NE 1/4).

This legal description is for the permit area (as shown on Attachment B) of the Crandall Canyon Mine. The permittee is authorized to conduct underground coal mining activities connected with mining on the foregoing described property subject to the conditions of the leases, the approved Right-of-Way, the approved mining plan, including all conditions and all other applicable conditions, laws and regulations.

Sec. 3 **COMPLIANCE** - The permittee will comply with the terms and conditions of the permit, all applicable performance standards and requirements of the State Program.

Sec. 4 **PERMIT TERM** - This revised permit expires on May 13, 1998.

Sec. 5 **ASSIGNMENT OF PERMIT RIGHTS** - The permit rights may not be transferred, assigned or sold without the approval of the Director, DOGM. Transfer, assignment or sale of permit rights must be done in accordance with applicable regulations, including but not limited to 30 CFR 740.13(e) and R645-303.

Sec. 6 **RIGHT OF ENTRY** - The permittee shall allow the authorized representative of the DOGM, including but not limited to inspectors, and representatives of OSMRE, without advance notice or a search warrant, upon presentation of appropriate credentials, and without delay to:

(a) Have the rights of entry provided for in 30 CFR 840.12, R645-400-110, 30 CFR 842.13 and R645-400-220; and,

(b) Be accompanied by private persons for the purpose of conducting an inspection in accordance with R645-400-100 , R645-400-200 and 30 CFR 842, when the inspection is in response to an alleged violation reported by the private person.

Sec. 7 **SCOPE OF OPERATIONS** - The permittee shall conduct underground coal mining activities only on those lands specifically designated as within the permit area on the maps submitted in the mining and reclamation plan and permit application and approved for the term of the permit and which are subject to the performance bond.

Sec. 8 **ENVIRONMENTAL IMPACTS** - The permittee shall minimize any adverse impact to the environment or public health and safety through but not limited to:

(a) Accelerated monitoring to determine the nature and extent of noncompliance and the results of the noncompliance;

(b) Immediate implementation of measures necessary to comply; and

(c) Warning, as soon as possible after learning of such noncompliance, any person whose health and safety is in imminent danger due to the noncompliance.

Sec. 9 **DISPOSAL OF POLLUTANTS** - The permittee shall dispose of solids, sludge, filter backwash or pollutants in the course of treatment or control of waters or emissions to the air in the manner required by the approved Utah State Program and the Federal Lands Program which prevents violation of any applicable state or federal law.

Sec. 10 **CONDUCT OF OPERATIONS** - The permittee shall conduct its operations:

(a) In accordance with the terms of the permit to prevent significant, imminent environmental harm to the health and safety of the public; and

(b) Utilizing methods specified as conditions of the permit by DOGM in approving alternative methods of compliance with the performance standards of the Act, the approved Utah State Program and the Federal Lands Program.

Sec. 11 **EXISTING STRUCTURES** - As applicable, the permittee will comply with R645-301 and R645-302 for compliance, modification, or abandonment of existing structures.

Sec. 12 **RECLAMATION FEE PAYMENTS** - The operator shall pay all reclamation fees required by 30 CFR Part 870 for coal produced under the permit, for sale, transfer or use.

Sec. 13 **AUTHORIZED AGENT** - The permittee shall provide the names, addresses and telephone numbers of persons responsible for operations under the permit to whom notices and orders are to be delivered.

Sec. 14 **COMPLIANCE WITH OTHER LAWS** - The permittee shall comply with the provisions of the Water Pollution Control Act (33 USC 1151 et seq,) and the Clean Air Act (42 USC 7401 et seq), UCA 26-11-1 et seq, and UCA 26-13-1 et seq.

Sec. 15 **PERMIT RENEWAL** - Upon expiration, this permit may be renewed for areas within the boundaries of the existing permit in accordance with the Act, the approved Utah State Program and the Federal Lands Program.

Sec. 16 **CULTURAL RESOURCES** - If during the course of mining operations, previously unidentified cultural resources are discovered, the permittee shall ensure that the site(s) is not disturbed and shall notify DOGM. DOGM, after coordination with OSMRE, shall inform the permittee of necessary actions required. The permittee shall implement the mitigation measures required by DOGM within the time frame specified by DOGM.

Sec. 17 **APPEALS** - The permittee shall have the right to appeal as provided for under R645-300.

Sec. 18 SPECIAL CONDITIONS - In addition to the general obligations and/or requirements set out in the leases, the federal mining plan approval, and this permit, the permittee shall comply special conditions appended hereto as Attachment A.

The above conditions (Secs. 1-18) are also imposed upon the permittee's agents and employees. The failure or refusal of any of these persons to comply with these conditions shall be deemed a failure of the permittee to comply with the terms of this permit and the lease. The permittee shall require his agents, contractors and subcontractors involved in activities concerning this permit to include these conditions in the contracts between and among them. These conditions may be revised or amended, in writing, by the mutual consent of DOGM and the permittee at any time to adjust to changed conditions or to correct an oversight. DOGM may amend these conditions at any time without the consent of the permittee in order to make them consistent with any new federal or state statutes and any new regulations.

THE STATE OF UTAH

By: Lowell P. Braxton for J. W. Carter

Date: 9/26/94

I certify that I have read, understand and accept the requirements of this permit and any special conditions attached.

_____

Authorized Representative of the Permittee

Date: _____

ATTACHMENT "A"

SPECIAL CONDITIONS

LBA #9
Genwal Coal Company
Crandall Canyon Mine
ACT/015/032

September 26, 1994

STIPULATION #1

This permit becomes effective for LBA #9 when the mining plan is approved by the Secretary of the Interior.

STIPULATION #2

By November 1, 1994, Genwal Coal Company must adequately address the plan deficiencies as identified in the Forest Service consent letter dated September 22, 1994.

STIPULATION #3

By November 1, 1994, Genwal Coal Company must provide clear legible design information for inclusion to the hydrology appendices of the Mining and Reclamation Plan.

STIPULATION #4

In accordance with the requirements of R645-301-752.250, Genwal Coal Company must provide the information and commitments required for Stream Buffer Zones on or before November 1, 1994. This must include all of the original commitments as provided in the previously approved buffer zone variance and a brief discussion on the area within the 100 ft. buffer zone as it relates to contemporaneous reclamation, SAE's and protection from re-disturbance during reclamation activities as is required by R645-301-342, R645-301-731, and R645-752.250.

STIPULATION #5

By November 1, 1994 Genwal Coal Company must revise the Mining and Reclamation Plan to provide for monitoring Spring SP-36 for Quality and Quantity.

STIPULATION #6

In order to meet the requirements of R645-301-731, Genwal Coal Company must monitor generated waste materials at least once a year for acid and toxic properties. This monitoring must be done in accordance with the Division's "Guidelines for Management of Topsoil and Overburden for Underground and Surface Coal Mining."

REQUIRED CORRECTIONS FOR THE GENWAL COAL COMPANY
CRANDALL CANYON NO. 1 MINING AND RECLAMATION PLAN

Page 3-6, Reptiles and Amphibians.

There is a discussion of amphibians, but no mention of reptiles.

Pages 3-6 through 3-8, Migratory Birds of High Federal Interest

The first paragraph starts with a discussion of the 22 species on the FWS list, then jumps into grassland hunting habitat, presumably for some type of raptor. Something is missing, and the paragraph does not make sense. Also, how current is the list of 22 species?

Number 11 on the list is the "Flammulated Owl", not "Plammulated Owl".

There is a discussion of a few of the birds on the list, but not all. Why were some omitted.

There is no mention of the Forest Service, Region 4, list of especially significant species occurring in the area.

In the paragraph immediately below the list of the 22 species (page 3-7), it states 5 of the species were "previously discussed in this report". We can not find where they were discussed.

The second paragraph below the species list does not make sense. It goes from a discussion of reporting the presence of T&E species into a discussion of golden eagle nest sites.

Page 3-9, section 3.22.230.

Spotted bats, Townsend's big-eared bats, and spotted frogs are known to occur on the Wasatch Plateau, but are not mentioned.

Page 3-14, section 3.33, Impacts to Fish and Wildlife.

There is a discussion of surveying for impacts to raptors, but no mention of identifying impacts to other the other wildlife or fish occupying the area.

Page 3-16, third paragraph.

The baseline data are useless unless there is a periodic check to determine deviations from baseline conditions. The company should commit to an aquatic macroinvertebrate study every 3 years to show that there have been no impacts to the aquatic environment.

Page 3-16, fourth paragraph.

Guzzlers may not provide satisfactory mitigation. Genwal must commit to complying with the lease stipulation which requires replacement of water in quality and quantity.

Page 3-17, Wildlife.

Raptor #4 should be "Swainson's hawk", not "Swenson hawk". Coopers hawk should be added to the list. It is unlikely that the Ferrugenous hawk would occur in the area.

If there are possible impacts to raptors, the company should contact the Forest Service in addition to UDWR.

Page 3-18, first paragraph.

The Forest Service will not consent to the sediment pond being left in place after the mine area is reclaimed. It must be removed as agreed to in the original mine plan.

Page 3-33, fourth paragraph.

As on page 3-16, a periodic survey of macroinvertebrates is necessary to compare with baseline data to detect changes in the aquatic environment.

Page 4-3, fifth paragraph.

The last word, "leases", should be replaced with "lease stipulations". The USFS consents, with stipulations, to the issuance of leases by the BLM. The USFS does not issue leases.

Page 4-5, first full paragraph.

There should be mention of the archaeological survey done for the new lease tract.

Page 5-8, item 5 under section 5.22 Coal Recovery.

The last four words, "approved by the Division.", should be replaced with "with the consent of the Forest Service and the approval of the Division."

Page 5-17, Section 5.25

The potential for subsidence under perennial streams must be discussed, and calculations shown for roof support between pillars where there is less than 400 feet of overburden.

Page 5-18, first full paragraph.

There is no mention of potential subsidence along the western edge of the new lease, in the area of the Joes Valley Fault. This area should be discussed thoroughly.

Page 5-27, third paragraph.

Guzzlers may not provide acceptable mitigation. Genwal must commit to replacing water in quality and quantity, as required by the lease stipulation.

Page 5-27, last paragraph.

We do not object to Genwal paying livestock permittees for lost forage, but Genwal must also replace the water in quality and quantity, as required by the lease stipulation.

Page 5-46, section 5.42.5 Timetable and Plans, Removal of Sedimentation Pond, second paragraph.

The Forest Service will not consent to leaving the pond after the mine is reclaimed. This is an unapproved change from the last mine plan.

Page 7-22, last paragraph.

Should mention that all of the water from springs or seeps on the lease ultimately flows into the Huntington or Cottonwood drainages, where they are 100% allocated.

Page 7-23, third paragraph.

If water discharge into Crandall Creek is required, a point source discharge permit would be required. If Genwal does not already have this permits, none are available according to the anti-degredation requirements of the State of Utah. If they have a permit, any discharge must comply with the requirements of the permit.

Page 7-46, last full paragraph.

Copies of the data and analysis must also be sent to the Forest Service.

Appendix 3-1. Vegetation Reference Area and Species List.

This does not appear to have been updated since 1988. Is it valid for the new lease area?

Appendix 3-2. Aquatic Resources of Crandall Canyon.

The macroinvertebrate survey data for 1981 and 1982 are missing.

Appendix 7-30. Manti-La Sal National Forest Vegetation Data.

The map needs a legend or description. It is impossible to determine vegetation type from the map as it is.

Appendix 7-31. Percent Ground and Crown Cover Calculations.

There is no description of the land type or vegetation type. The data in the table are useless as presented and must be revised.

ENVIRONMENTAL ASSESSMENT

U.S. DEPARTMENT OF THE INTERIOR
OFFICE OF SURFACE MINING RECLAMATION AND ENFORCEMENT
FINDING OF NO SIGNIFICANT IMPACT
FOR
Crandall Canyon Mine
Federal Lease UTU-68082
Mining Plan Decision Document

A. Introduction

Genwal Coal Company submitted a permit application package (PAP) for a permit amendment for the Crandall Canyon Mine to the Utah Division of Oil, Gas and Mining (DOGM) under the Utah State program (30 CFR Part 944). The PAP proposes extending underground mining operations into about 152 acres of Federal lease UTU-68082. The proposed mining plan would cause no new surface disturbance except for mining-induced subsidence. Special Condition 1 of the State permit will prevent subsidence impact to the South Fork of Horse Creek.

Under the Mineral Leasing Act of 1920, the Assistant Secretary, Land and Minerals Management, must approve, approve with conditions, or disapprove the mining plan for Federal lease UTU-68082. Pursuant to 30 CFR Part 746, the Office of Surface Mining Reclamation and Enforcement (OSM) is recommending approval of this mining plan.

B. Statement of Environmental Significance of the Proposed Action

The undersigned person has determined that the above-named proposed action would not have a significant impact on the quality of the human environment under section 102(2)(C) of the National Environmental Policy Act of 1969 (NEPA), 42 U.S.C. §§ 4332(2)(C), and therefore, an environmental impact statement is not required.

This finding of no significant impact is based on the attached September 1993 environmental assessment (EA) jointly prepared by the USDA Forest Service, the Bureau of Land Management and OSM. The EA addresses the environmental impacts resulting from the issuance of Federal lease UTU-68082 and approval of the mining plan. OSM independently evaluated the EA as of the date specified below and determined that it adequately and accurately assesses the environmental impacts of the proposed action and provides sufficient evidence and analysis for this finding of no significant impact. OSM takes full responsibility for the accuracy, scope, and content of the attached EA.

Richard E. Dawes — 4/26/94

Chief, Federal Programs Division
Western Support Center

Date

ENVIRONMENTAL ASSESSMENT

COAL LEASE APPLICATION UTU-68082, LBA NO. 9
CRANDALL CANYON TRACT

USDA, FOREST SERVICE, MANTI-LA SAL NATIONAL FOREST
USDI, BUREAU OF LAND MANAGEMENT, MOAB DISTRICT
EMERY COUNTY, UTAH

Responsible Officials:

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Intermountain Region
USDA, Forest Service
324 25th Street
Ogden, Utah 84401

James M. Parker, State Director
Utah State Office
USDI, Bureau of Land Management
324 South State, Suite 301
Salt Lake City, Utah 84111-2303

Cooperating Agency:

USDI, Office of Surface Mining,
Reclamation, and Enforcement
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SEPTEMBER, 1993

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CHAPTER I - PURPOSE AND NEED

A. PROPOSED ACTION

On March 4, 1991, Genwal Coal Company filed Lease By Application (LBA) No. 9 with the Bureau of Land Management (BLM), Utah State Office, to lease Federal coal lands in the Crandall Canyon Tract, assigned serial number UTU-68082 (see Figure 1). This application involves Genwal securing additional, adjacent, coal reserves for their active Crandall Canyon Mine located about 24 air miles southwest of Price, Utah on the Price Ranger District of the Manti-La Sal National Forest. Genwal has indicated a need for the coal in their application: that will maintain their existing production level; allow the company to seek additional long-term and spot contract sales; that will allow the mine to achieve a more efficient production level; and provide recovery of coal deposits which, if not leased, would be bypassed.

On December 29, 1989, Mining and Energy Resources, Inc. (MERI) filed LBA No. 5 with the BLM, 480 acres of which was later overlapped by Genwal's application (see Figure 1). The BLM decided to delineate a single tract based on Genwal's application because of an immediate need for additional coal reserves at the Crandall Canyon Mine.

In 1990, Genwal was rapidly depleting the reserves in their two Federal coal leases, SL-062648 and U-54762, and needed to access reserves in their two State coal leases about 3/4 mile to the west (see Figure 2). In order to access these State coal reserves, they applied for and received from the Forest Service, an Underground Right-of-Way assigned serial number UTU-66838 on July 20, 1990 (see Figure 2). In mining these State reserves, Genwal discovered the need to subside adjacent, unleased Federal lands north of their State leases. They applied for and received a 50 acre Special Use Permit from the Forest Service on April 28, 1992 (see Figure 2).

The tract will be evaluated under the Lease-by-Application (LBA) process adopted by the Uinta-Southwestern Utah Coal Region (43 CFR 3425). The first step in the process was to complete tract delineation. Delineation was completed on August 10, 1992. The Tract Delineation Report is attached as Appendix A. The next step in the LBA process was to determine whether or not there was data available to meet Data Adequacy Standards established by the coal region. Standards were determined to be met for the majority of the tract on December 2,. 1992. The next step in the process was to apply Unsuitability Criteria for Coal Mining that are contained in Federal Regulations at 43 CFR 3461 and conduct an environmental analysis of the proposed action (tract as delineated). This document has been prepared to satify analysis requirements and tiers to the Final Environmental Impact Statement, Manti-La Sal National Forest,1986 (Forest Plan FEIS), and the Final Environmental Impact Statement for the BLM's San Rafael Proposed Resource Management Plan, 1991.

B. PURPOSE AND NEED

The proposed action will conform to the overall guidance of the Forest Plan and FEIS and the Final Environmental Impact Statement for the BLM's San Rafael

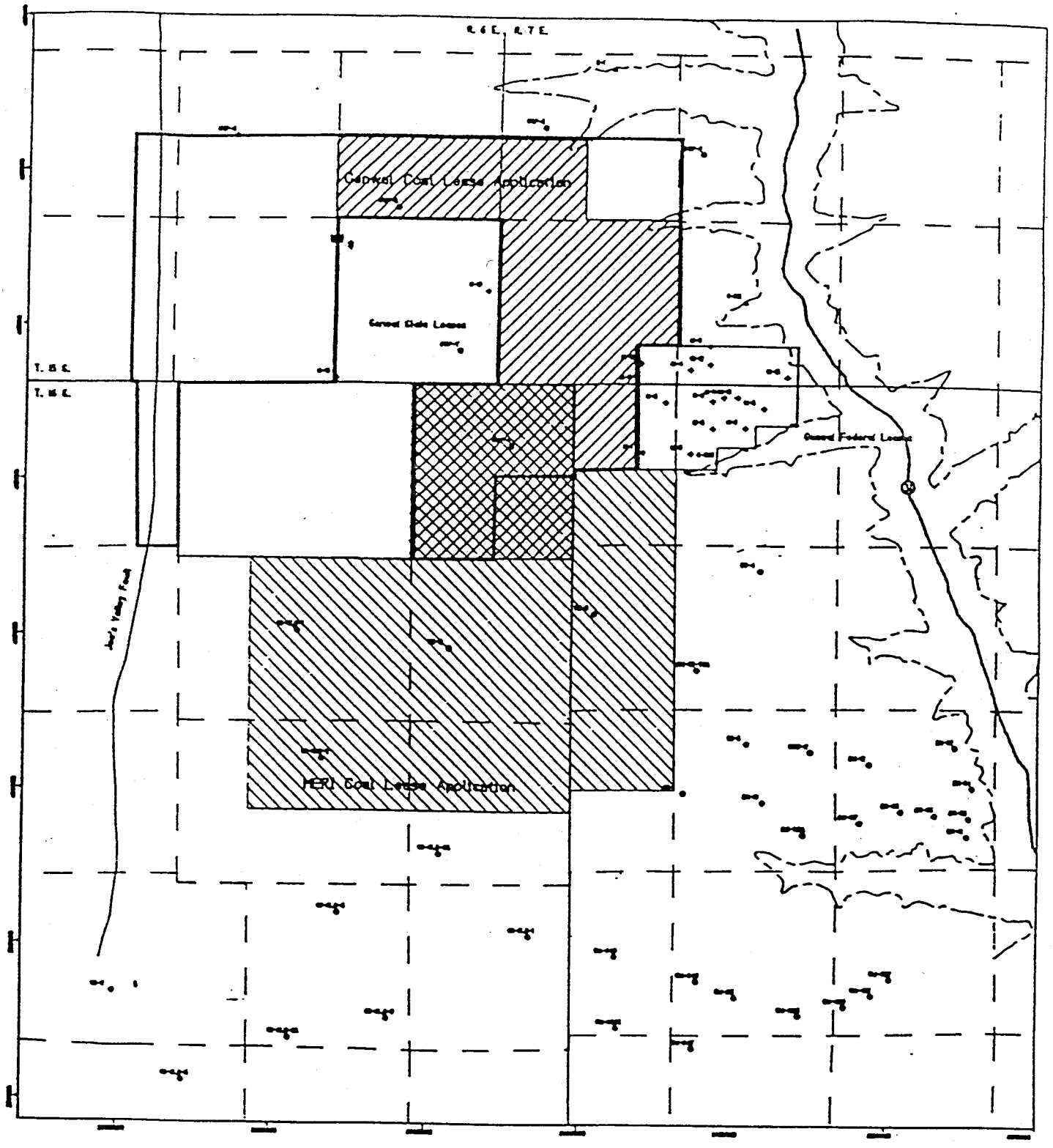


Figure 1: Coal Lease Applications, Crandall Canyon Area, Utah

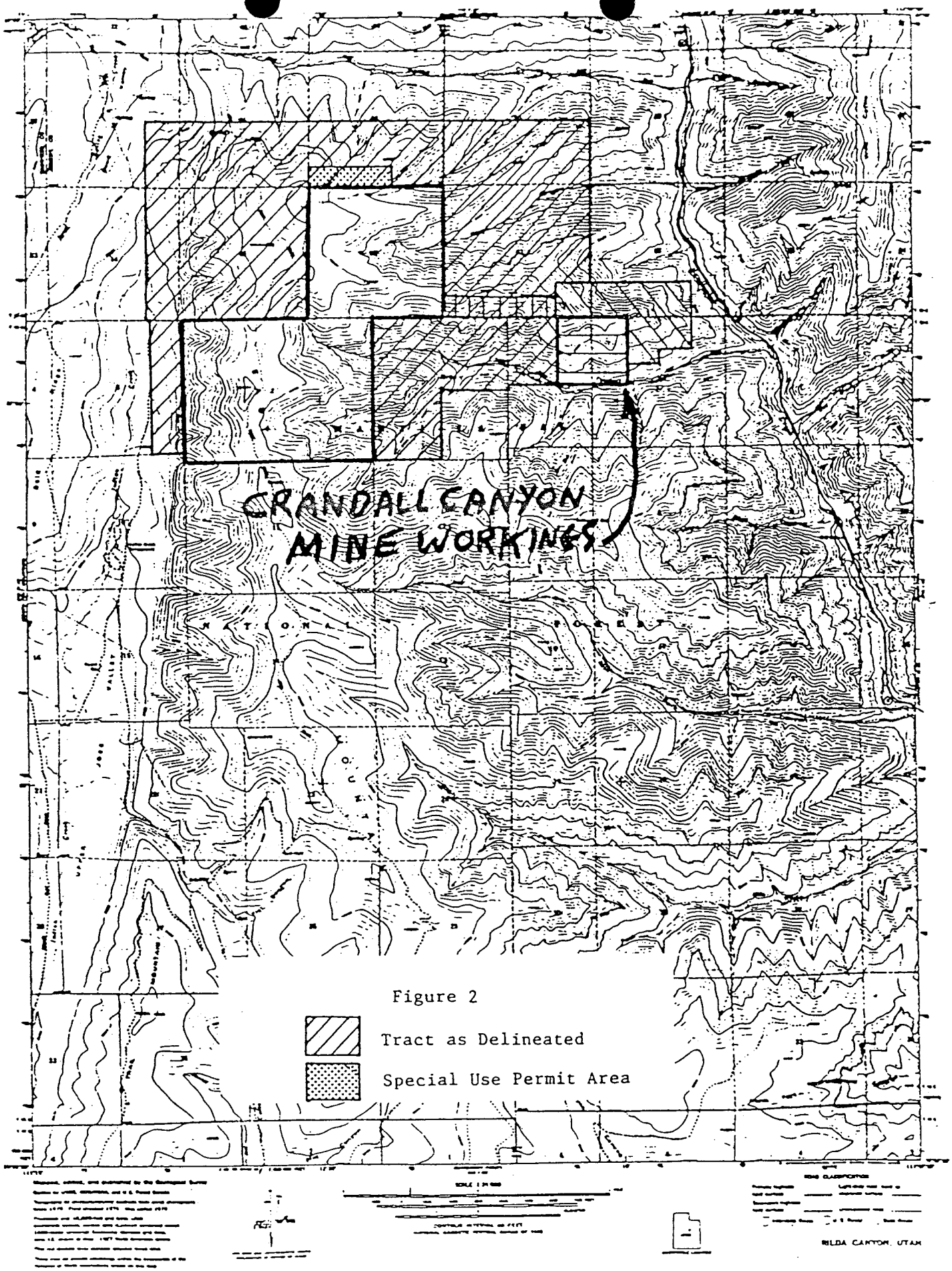


Figure 2

Tract as Delineated

Special Use Permit Area

Right-of-Way UTU-66838

Federal Coal Lease SL-062648

Federal Coal Lease U-54762

Proposed Resource Management Plan. This Environmental Assessment tiers to the decisions of both EISs which are available for review at the Price Ranger District and Manti-La Sal National Forest offices and the BLM's San Rafael Resource Area and the Moab District offices, respectively.

The purposes of the proposal are to maintain Genwal's existing production levels for an extended length of time so that additional long-term contracts can be procured and to recover coal deposits that would be bypassed if not leased.

Pursuant to the National Environmental Policy Act of 1969, a need exists for a decision to be made relative to the proposed action. The Regional Forester, Intermountain Regional, USDA, Forest Service (FS), and the Utah State Director of the BLM are the officials responsible to decide whether or not to offer the tract for competitive leasing. They may decide to deny the application or conditionally approve one of the action alternatives described in Chapter II. The decision will be based on the environmental analysis presented in this jointly-prepared (BLM/FS) document, but will be displayed in a separate decision document following completion of the final EA. If the application is approved and the tract is leased to Genwal, the Underground Right-of-Way and the Special Use Permit to subside, mentioned in the Introduction, will no longer be needed and they will be cancelled.

C. SCOPE OF THE ANALYSIS

In determining the scope of action, the alternatives, and the impacts to consider in this Environmental Assessment (EA), the Interdisciplinary Team (IDT) applied the principles of the regulations implementing the National Environmental Policy Act (NEPA), 40 CFR 1508.25.

The scope of this analysis includes two types of actions, two types of alternatives, and three types of impacts. They include actions which may be:

> ***Connected Actions.*** *These actions are closely related and therefore should be discussed in the same disclosure document. Actions are connected if they: automatically trigger other actions which may require environmental impact statements (EIS'S); cannot or will not proceed unless other actions are taken previously or simultaneously; or, are interdependent parts of a larger action and depend on the larger action for justification.*
>
> *The proposed action includes those activities necessary to fulfill the identified purpose and need, as well as all connected actions as identified in the alternatives described in Chapter II. Actions necessary to meet the purpose and need include a decision selecting an action alternative and lease issuance to Genwal. Connected actions as defined above include mitigation measures described in the alternatives. We are not aware of any other connected actions.*
>
> ***Cumulative Actions.*** *These actions, when viewed with other proposed actions, have cumulative impacts and should therefore be discussed in the same document. The scope of the analysis includes past, present, and reasonably foreseeable future actions, which may be cumulative in nature, and also includes cumulative actions occurring or proposed on other lands.*

Similar Actions. *These actions, when viewed with other reasonably foreseeable or proposed actions, have similarities that provide a basis for evaluating their environmental consequences together, such as common timing or geography.*

Two types of alternatives were considered in the analysis, including a no action and other reasonable action alternatives. Site-specific mitigation measures are discussed in Chapter II.

Three types of impacts are considered in the analysis, including those which are direct, indirect, and cumulative, pursuant to 40 CFR 1508.7 and 40 CFR 1508.8. These impacts are described below and are discussed in Chapter IV.

***Direct effects** are caused by the action and occur at the same time and place.*

Direct effects on all resources were analyzed for all proposed actions and connected actions described in the alternatives, Chapter II.

***Indirect effects** are caused by the proposed action and are later in time or farther removed in distance, but are still reasonably foreseeable.*

Indirect effects on all resources were analyzed for the proposed actions and connected actions described in the alternatives, Chapter II. Direct and indirect effects are considered equally in the analysis and are not specifically identified or disclosed separately.

*Each aspect of a resource can be affected by activities occurring within a period of time or area of influence. This area of influence, or area of potential **cumulative effect**, is different for each resource. Chapter II describes the spatial and temporal scope of the cumulative effects area. The effects of all past, present, and reasonably foreseeable future actions occurring within these areas were considered. Past, present, and reasonably foreseeable future actions occurring on all ownerships are considered in the effects analysis in Chapter IV.*

D. AUTHORIZING ACTIONS

This coal lease application was submitted and will be processed and evaluated under the following actions: Mineral Leasing Act of 1920, as amended; National Environmental Policy Act of 1969 (NEPA); Multiple-Use Sustained Yield Act of 1960; Federal Land Policy and Management Act (FLPMA) of 1976; National Forest Management Act (NFMA) of 1976; Federal Coal Leasing Amendments Act of 1976, as amended; and Federal Regulations at 43 CFR 3400. Permitting of mining operations within the tract, if leased, would be processed and evaluated under the following actions: Surface Mining Control and Reclamation Act (SMCRA) of 1977 and Federal Regulations at 30 CFR 700. The office of Surface Mining, Reclamation, and Enforcement (OSM) has responsibility for permitting mines which involve Federal coal. Therefore, they have been identified as a cooperating agency. A more detailed description of the role of OSM in the regulation of coal mining activities is presented in Appendix D.

CHAPTER II - PROPOSED ACTION AND ALTERNATIVES

A. INTRODUCTION

This chapter is the heart of the document as it summarizes the EA. This chapter presents the issues, the alternatives considered, and a summary of the impacts of the alternatives. Five alternatives were developed by the ID Team: a No Action alternative (A) and four action alternatives (B, C, D, E) (see Figure 3).

B. MANAGEMENT HISTORY OF PROJECT AREA

The character of the area is derived from the influence of past wildfires, timber harvest, wildlife and livestock grazing, mining, and recreation.

Forest Plan Management Units within the project area include: RNG (Range Forage Production), TBR (Wood Fiber Production and Utilization), RPN (Riparian), WPE (Watershed Protection and Improvement), MMA (Leasable Minerals Area), and SPR (Semiprimitive Recreation). The requirements for each management unit, as defined in the Forest Plan, consist of a prescription summary and a set of management requirements. The prescription summary identifies the primary management emphasis. All prescriptions allow for multiple-use with the application of management requirements for non-emphasis activities.

The project area falls within the Crandall Ridge Sheep and Goat (S&G), Crandall Canyon S&G, and Trail Mountain Cattle and Horse (C&H) Allotments. The area has been grazed by livestock for well over a century.

Coal exploration and leasing have occured in the area over the past 50 years while oil and gas leasing, exploration and development have occured since the early '50s. Genwal acquired the coal leases and began development in the early '80s. Numerous environmental analyses have been prepared for these activities over the years.

The ID Team has reviewed these environmental analyses for relevancy to the proposed action. It was decided to conduct a new analysis based on the need for updated information to make a sound resource decision.

C. PUBLIC PARTICIPATION

Integral to the environmental process is project scoping, which involves the solicitation of comments from Federal, State and local agencies and interested organizations and individuals to assure that the most accurate and current environmental information and public issues are incorporated into planning and decision-making. The proposal was included in an "Environmental Status Report" that was mailed to over 100 addressees on August 30, 1993. This report described the projects being planned on the Manti-La Sal National Forest, an overview of each project, and the contact person serving as the Interdisciplinary Team Leader.

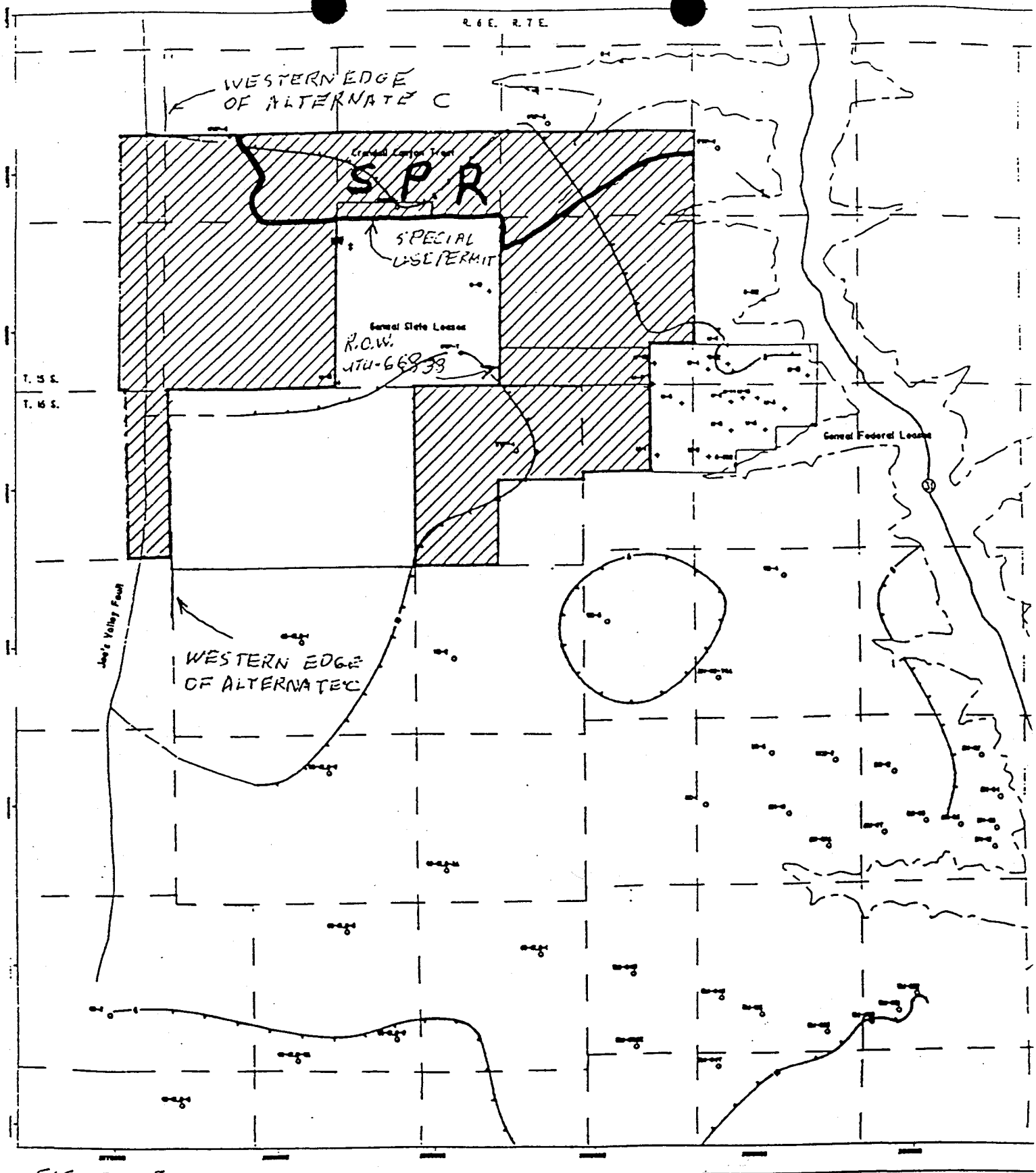


FIGURE 3

Lease by Application No. 9, Crandall Canyon Tract

Scoping for this project was initiated March 23, 1993 and finalized on June 21, 1993. Comments were solicited from 48 entities which are listed in Chapter V. Responses were received from: The Utah Division of Wildlife Resources, Emery Water Conservancy District, Utah Wilderness Association, and Neilsen & Senior, Attorneys and Counselors. An Interdisciplinary Team (ID Team) of BLM and FS resource specialists analyzed the proposed action using the public responses to develop the issues.

D. ISSUES

The four responses received during the public scoping process, along with issues developed by the BLM, FS, and Genwal, were used by the ID Team in determining the following issues relative to the proposed action. The content of the comments was analyzed for the identification and/or verification of environmental issues. One issue was raised that was categorized as resolved through normal mitigation practices.

Socioeconomics

If the tract is not leased, the Federal coal reserves would not be recovered and the mine would probably close within the next 4 years. This would result in the loss of of the existing 100 mining company jobs, an unknown number of mining-industry support jobs, coal royalties, and an estimated 25 million tons of recoverable Federal coal.

* *The socioeconomics issue will be measured in tons of available coal, royalty to Federal, State, and local governments, and projected mine life in comparing alternatives.*

Land Stability

Mining-induced subsidence could cause surface cracking and aggravate existing unstable slopes within the tract.

* *Measurement would recognize whether or not land stability would be affected in comparing alternatives.*

Ground and Surface Water

Mine workings in the proposed tract could encounter additional ground water that could be discharged into Crandall Creek. The Crandall Canyon

Mine has a discharge permit, but to date, has not discharged water into Crandall Creek.

This could result in diverting ground water to the surface that would otherwise remain perched or flow underground to discharge as seeps and springs west of the tract (due to the dip of the rock strata) in the Joes Valley drainage.

Discharge of mine water into Crandall Creek would increase flow and could alter water quality if mine contamination were present.

Mining induced subsidence could alter the ground and surface water systems.

The flow of some springs could change and new springs could emerge.

Subsidence of perennial drainages could alter stream morphology with full extraction mining. Sediment could be added to the drainages due to stream channel alteration and flow could be diverted underground if surface cracks develop in the drainage channels.

A notable reduction of surface flow into Indian Creek could result in loss of wetland areas and related riparian vegetation.

There could be an infringement on existing water rights.

The increased potential for traffic-related accidents in Crandall and Huntington Canyons could increase the possibility of spills of polluting materials, such as coal, diesel fuel, gasoline, etc.

* *Alternatives would be compared by describing the estimated overall potential effects in changes to stream morphology, sediment load, and flow.*

Recreation

The northern portion of the delineated lease tract includes approximately 600 acres of the Candland Mountain Semiprimitive, Recreation Area (SPR). Mining under this area would cause subsidence and could alter the flow of springs and stream reaches in the South Fork of Horse Canyon.

The Utah Wilderness Association objects to surface disturbing actions, including subsidence or water flow interruption within the SPR unit.

Higher coal-mining related traffic volumes maintained for an additional 19 years in Crandall and Huntington Canyons would continue the potential for conflicts with recreation activities and traffic.

* *This issue would be measured by comparing effects to visual quality obectives (VQO) in the Candland Mountain Semi-primitive Recreation Area (SPR) and displaying duration of effects to recreation by mine-related traffic.*

Transportation

Depending on demand, coal production at the Crandall Canyon Mine could currently increase from 1.2 million tons per year (1992) to 1.5 million tons with an attendant increase in mine-related traffic (coal hauling and mine business traffic) in Crandall Canyon (Forest Development Road 50248) and Huntington Canyon (State Highway 31) before the tract were ever leased. Traffic on this highway is reaching maximum design capacities. With current reserves and production rate of 1.3 million tons per year, this traffic volume would last for 4 years. If the tract were leased, the traffic volume would last an additional 19 years.

This additional 19 years of traffic volume would increase the potential for traffic-related accidents.

If another mine were to be opened in Crandall Canyon, then the traffic volume in Crandall Canyon and Huntington Canyon would exceed design capabilities.

* *Comparison of alternatives would be measured by displaying the duration of mine-related traffic effects on recreation.*

Wildlife

Alteration of the flow or morphology of perennial drainages could decrease habitat quality for macroinvertebrate species and trout (including spawning habitat).

Alteration of the flow of springs could alter watering opportunities for terrestrial wildlife species.

* *This issue would be measured by comparing the potential level of effects on wildlife.*

Resolved Issue - Other Minerals

The proposed tract encompasses lands leased for oil and gas that have a high potential for the occurrence and development of natural gas. Coal mining could conflict with oil and gas exploration and production.

Conflicts between oil and gas leasing and coal leasing will be resolved through standard lease stipulations. The BLM will retain ultimate authority for resolving conflicts between oil and gas and coal operations.

E. DEVELOPEMENT OF ALTERNATIVES

In developing the alternatives, the ID Team considered the issues identified during public scoping while addressing the objectives of the proposed leasing action. These alternatives present the Deciding Officers with a reasonable range of alternatives from which to choose. No alternatives were developed that were eliminated from further consideration.

F. DESCRIPTION OF ALTERNATIVES

ALTERNATIVE A - No Action:

Under this alternative the tract would not be offered for lease.

ALTERNATIVE B - Offer the Tract for Lease as Delineated Subject to Management Requirements:

Under this alternative the tract would be offered for competitive lease as delineated subject to the BLM's standard lease terms and Forest Service Special Coal Lease Stipulations including the Department of Agriculture

Stipulation contained in Appendix B of the Forest Plan.

ALTERNATIVE C - Offer the Tract for Lease Excluding the Western Strip:

This alternative would be the same as Alternative B except that the approximate 400 acre area west of Sections 26, 35, T15S, R6E, and Section 2, T16S, R6E would be excluded from the tract. Full support mining would be allowed up to the tract boundary. Second mining would be limited using a 22 degree angle of draw from the coal seam to the Joes Valley Fault which is also the approximate location of the section line. The boundary adjustment and second mining restriction would be needed to protect sensitive geo-hydrologic resources including a wetland in Upper Joes Valley. The second mining restriction could be waved if geo-hydrologic information can be provided that shows that the hydrologic balance could be maintained and that these sensitive geo-hydrologic resources could be adequately protected.

ALTERNATIVE D - Offer the Tract for Lease Excluding the SPR Area:

This alternative would be the same as Alternative B except that the 600 acre area in the Candland Mountain SPR in Sections 25 and 26, T15S, R6E, and Sections 30 and 31, T15S, R7E would be excluded from the tract. Second mining would be limited using a 22 degree angle of draw from the coal seam to the section line, thereby allowing no subsidence to occur within the SPR.

ALTERNATIVE E - Offer the Tract for Lease excluding the Western Strip and the SPR Area:

This alternative would combine Alternatives C and D for the same reasons mentioned above. The western strip and the SPR would both be excluded from the tract.

G. SUMMARY COMPARISON OF ALTERNATIVES

A detailed analysis of the environmental consequences or impacts is provided in Chapter IV. The following table is intended to be a summary for use in comparing alternatives on a relative basis.

TABLE II - 1

COMPARISON OF ALTERNATIVES BY ISSUES

ISSUES * Indicators	ALTERNATIVE A NO ACTION	ALTERNATIVE B PROPOSED ACTION	ALTERNATIVE C PROPOSED ACTION Minus Western Strip	ALTERNATIVE D PROPOSED ACTION Minus SPR	ALTERNATIVE E PROPOSED ACTION Minus Western Strip & SPR
SOCIO-ECONOMICS OF MINING					
* Tons of Coal	Up to 25 Million not available	Up to 25 Million recovered	Estimated 23.2 Million recovered	Estimated 22.9 Millions recovered	Estimated 21.3 Million recovered
* Estimated Royalty to Governments	No benefit	44.0 Million realized	41.2 Million realized	40.3 Million realized	37.5 Million realized
* Estimated Mine Life	4 years	23 years	22 years	21 years	20 years
LAND STABILITY	No effect	Some effect	Some effect	Some effect	Some effect
EFFECT OF SUBSIDENCE ON HYDROLOGUY	No effect	High potential effect overall	Low potential effect overall	High potential effect overall	Low potential effect overall
RECREATION AND TRANSPORTATION					
* SPR VQR	No effect	Low potential effect	No effect	Low potential effect	No effect
* Recreation and Traffic Effects	Last for 4 years	Last for 23 years	Last for 22 years	Last for 21 years	Last for 20 years
WILDLIFE					
* Aquatic	No effect	High potential effects	Moderate potential effects	High potential effects	Moderate potential effects
* Terrestrial	No effect	Moderate potential effect	Low potential effect	Moderate potential effect	Low potential effect

CHAPTER III - AFFECTED ENVIRONMENT

A. INTRODUCTION

This chapter describes the environmental components of the area that would affect and would be affected by any of the action alternatives, if implemented. The resource components include the natural and human conditions that could change under the implementation of an action alternative or that could aid the reader to better understand the alternatives.

B. SOCIOECONOMICS AND MINING

Socioeconomics

The area of influence for the subject coal lease application, located near the company's Crandall Canyon Mine, is generally confined to the Emery County area. The tract is located in the vicinity of Huntington Canyon about 18 miles northwest of Huntington, Utah.

The Crandall Canyon Mine has produced coal since 1984 and has gone from a relatively small mine with 300,000 tons production in 1990 to an anticipated 1.3 million tons in 1993. Nevada Power purchased the operation in 1989 and subsequently sold half interest to Intermountain Power Association. The mine and related facilites employ about 100 workers, primarily from Emery County. Coal is hauled to loadouts at Mohrland, Wildcat siding, or to a loadout in the Wellington area which provide jobs for an additional 30 truck drivers and an unknown number of other supporting jobs to the industry.

Emery County's estimated 1992 population was 10,200. The County's population peaked in 1983 at 12,700 after which it declined steadily until 1991 where it has now leveled off. This is a significant 20% decline over an 8 year period, returning to population levels experienced in the mid 1970's. Outmigration took place throughout the declining period.

Nonagriculture employment in the county in 1991 totaled 3,437. This is a significant 2,453 jobs or 42% loss than the peak year of 1982. Considering 1991 data, the major industry employment categories in Emery County were:

Government	845 (24.6%)
Trans.,Communic.,Public Utilities	788 (22.9%)
Mining	755 (22%)
Trades	441 (12.8)
Services	281 (8.2%)

Outside of government employment including local, State, and Federal, the dominance of the mining industry in the county, which is primarily coal mining, is evident. Coal mining, handling, transportation, and generation of electricity from coal-fired facilities likely provides over 40% of the County's jobs. This dominance is even more apparent when you look at the personal income and earnings in the county (1989 data) in order of importance:

D. GEOLOGY AND HYDROLOGY

Geology

ALTERNATIVE A

No effect

ALL ACTION ALTERNATIVES

The west slope of East Mountain has been disrupted by landslides. Most appear to be failures of colluvial materials. Others may be deeper slump features. Mining induced subsidence along the outcrop may trigger additional landslides, especially during wet periods.

Mitigation - The potential for mining induced slope failure should be evaluated prior to mining. Recovery mining should be avoided during extremely wet periods.

Hydrology

ALTERNATIVE A

No effect. Subsidence in the tract due to the angle-of-draw extension caused by mining in adjacent areas has not caused impacts to hydrology within the tract area.

ALTERNATIVES B AND D

Subsidence would fracture the rock layers overlying the extracted coal seam. The flow of ground water could be altered causing some changes to the flow of springs in and directly adjacent to the lease tract area. Some springs could decrease or increase in flow. It is also possible that some springs could dry up while new springs could be created. Monitoring of springs at the Crandall Canyon Mine and other mines on the Wasatch Plateau has shown that this is very unlikely considering the amount of overburden over most of the tract area, formations that contain considerable amounts of clay that expands when wet, and the self healing nature of fractures. Ground water generally flows down-dip to the southeast toward Huntington Canyon. Ground water would continue to flow in this direction even if perched aquifers are fractured.

Water originating on the west slope of East Mountain flows into Upper Joes Valley where it sustains springs, streams, and a wet meadow. Subsidence caused by coal mining could induce some fracturing of the overlying strata and surface. These fractures could intercept water resources before they reach Upper Joes Valley. Shallow fractures are likely to heal and only temporarily divert water. Deep seated fractures are more likely to permanently divert water from reaching Upper Joes Valley. This could happen if subsidence effects were focused along the Joes Valley Fault. If mining were to occur westward all the way to the fault line, normal subsidence curves could not be used to predict subsidence effects because the west end of the curve would be cut-off by the fault. Assuming minimal compression against the fault, friction between the fault blocks and rubbilization of the overburden would be the limiting

factors in the amount of subsidence that could occur. If subsidence were to be focused along the fault, the amount of subsidence could be nearly equivalent to the extraction height of the coal seam. If this were to occur, ponding along the fault line is likely to occur. If the character of the fault becomes open due to subsidence, surface waters could be diverted into the fault and away from the wetland they support in Upper Joes Valley.

Mine workings could encounter water stored in perched aquifers and divert it into the mine. To date, the mine has not encountered water volumes sufficient for meeting the needs of mining or to require discharge of water into Crandall Creek. Exploration drilling has demonstrated that the potentiometric surface of the Starpoint-Blackhawk Regional Aquifer lies below the Hiawatha seam except for the extreme southeastern corner of the tract. It is unlikely that mining would produce water volumes sufficient to cause dewatering of the aquifer and require discharge of mine water to Crandall Canyon unless mine workings are driven directly into the Joes Valley Fault.

If the Joes Valley Fault acts as an aquiclude and conduit for ground water flow, as suspected, driving of mine workings into the fault area could encounter large amounts of ground water. This water would be diverted into the mine and discharged into Crandall Creek, increasing the flow and altering the water quality in Crandall and Huntington Creeks. This could potentially also decrease the amount of water presently flowing into Indian Creek. There is no way to predict the potential for this to occur or the amount of water that could be encountered by mining into the fault. This impact would be avoided by requiring the lessee to drill laterally ahead of mine workings toward the fault zone to test for the presence of water. If flowing water is encountered, the mine operator would be required to leave an adequate barrier or construct seals to prevent diverting the water into the mine and the associated impacts.

Lease stipulations require specific approval to subside any perennial drainages within the tract. Subsidence of perennial drainages on or directly adjacent to the tract could be considered if the study being conducted at the headwaters of Blind Canyon Creek (subsidence of the headwaters of Blind Canyon Creek on State Lease ML-21569) determines that mining under a perennial drainage would not cause adverse or unmitigable changes in flow, stream morphology, erosion/sediment production, or fish habitat.

Lease stipulations and the mining regulations require monitoring of ground water, surface drainages, and springs sufficient to detect impacts caused by mining. They also require implementation of measures needed to mitigate impacts detected by monitoring that result in material damages to resources or water uses.

Since it is anticipated that these alternatives could cause changes to the hydrologic system and flow of perennial drainages that could adversely affect existing water uses (including aquatic habitat) and water rights within and downstream of the tract, the level of potential impact is considered high.

ALTERNATIVES C AND E

The impacts under this alternative would be the same as discussed above for Alternatives B and D, except that the potential for disrupting flow in the springs and drainages west of the Joes Valley Fault, including Indian Creek,

would be prevented. This would be accomplished by not leasing the area west of the Joes Valley Fault and limiting the extent of second mining by the 22 degree angle-of-draw from the fault. In addition, the operator would be required to drill ahead of mine workings to test the volume of water in the Joes Valley Fault zone and to make adjustments in the mine plan to prevent encountering large amounts of ground water.

Some surface cracks could occur on the west slope of East Mountain but the cracks would be shallow and would heal rapidly. They could intercept surface water resources before they reach Upper Joes Valley on a temporary, short-term basis with little, if any, impact to surface water flow. It is possible, but unlikely, that surface cracks would occur along the northern portion of the tract within the Candland Mountain SPR. Subsidence in the SPR authorized by the 1991 special use permit did not induce surface cracks or cause impacts to surface water.

Lease stipulations and the mining regulations require monitoring of ground water, surface drainages, and springs sufficient to detect impacts caused by mining. They also require implementation of measures needed to mitigate impacts detected by monitoring that result in material damages to resources or water uses.

Since it is not anticipated that these alternatives would cause changes to the hydrologic system and flow/quality of perennial drainages that would adversely affect existing water uses (including aquatic habitat) and water rights within or downstream of the tract, the level of potential impact is considered minimal or low.

E. SPR AND VISUAL RESOURCES

ALTERNATIVES A, D and E

No effect to visual resources in the SPR.

ALTERNATIVES B and C

There would be possible subsidence in the SPR due to underground mining. Because of the amount of overburden, method of coal extraction employed, and type and amount of vegetative cover present, the possibility of visible subsidence in the SPR is minimal. Upon visiting the site immediately adjacent to the SPR where mining has occurred on State lands, no subsidence could be seen. This adjacent area possesses little vegetative cover due to a past fire and possible visual impacts caused by subsidence would have been readily apparent.

If subsidence actually did take place in the SPR in a manner similar to that which has been confirmed to occur in another area near the Crandall Canyon mining facility, one could be fully confident it would not be visually evident (given identical soils and geology), and these alternatives would have a low potential to affect visual quality objectives (VQO). At this location below the mining facility, the amount of overburden is less than in the SPR and consequently the potential for subsidence and its subsequent visual evidence at the surface is greater. In addition this lower elevation slope has little

vegetative cover and any slides or fissures at the surface would be easily noticed. Subsidence which has occured under this relatively barren slope is not visually apparent in any way. The majority of the SPR land involved is much more densely vegetated, particularly with conifer.

It may be expected with a high amount of confidence that any subsidence which does occur will not be visually evident in the more thickly overburdened and densely vegetated portion of the tract. Accordingly, it is anticipated that the visual quality objective of retention will be maintained in the SPR.

F. TRANSPORTATION

At the production rate of 1.5 million tons per year the service volume of Highway 31 will not be exceeded and the service level will not decrease. Highways users will experience decreased speeds during mine shift changes, especially near the intersection of the Crandall Canyon Road. Travelers will also experience the nuisance of coal debris from coal haulage vehicles until existing covered-load laws are enforced by local and state law enforcement officers. The peak traffic volume will be 120 vehicles per hour. The dispersed recreational user will notice the increase in traffic during peak periods.

At the production rate of 1.5 million tons per year the traffic volume of the Crandall Canyon Road would approach 530 vehicles per day with a peak hourly volume of 86 vehicles . The peak service volume allowable without unstable or forced-flow is estimated at 96 vehicles per hour. The primary use of this road would remain coal haulage until the reserves were depleted. The road would still provide access for range and dispersed recreation use from the trailhead. The lower speeds associated with use of this road are generally considered acceptable for short local access roads.

Visitors using recreation sites in the vicinity of Crandall and lower Huntington Canyons are impacted either audibly or visually by mine traffic.

ALTERNATIVE A

No additional effects would occur above and beyond the 4 years duration expected under existing conditions.

ALTERNATIVE B

Above effects would continue for an additional 19 years.

ALTERNATIVE C

Above effects would continue for an additional 18 years.

ALTERNATIVE D

Above effects would continue for an additional 17 years.

ALTERNATIVE E

Above effects would continue for an additional 16 years.

G. WILDLIFE

ALTERNATIVE A

If the "no action" alternative is selected, the aquatic and terrestrial wildlife habitat and populations should not change from present conditions provided that other conditions remain constant (i.e., management direction, other unrelated improvement projects, climatic conditions). No additional effect to wildlife is expected if this alternative is selected.

ALTERNATIVES B AND D

If one of these alternatives is selected, there will be subsidence. Associated with subsidence is the possibility of water loss due to fracturing of the soil/rock layers. Lease stipulations require that the lessee/operator replace water identified for protection in the event that water loss occurs as a result of mining. The possibility of water loss is associated largely with the springs within the areas to be subsided. Any reduction of water from springs could reduce the amount of water that enters the streams located beneath them.

The area of greatest concern in regard to water loss is the watershed of Indian Creek which has numerous springs that feed associated wetlands that eventually drain into Indian Creek. This area also has numerous faults which adds to the complexity of the effects of subsidence and could amplify the impacts upon the spring/water resources. Indian Creek supports a Brook trout fishery which is largely dependent on its spring water sources for flow. It is doubtful that any fish production change within Indian Creek would be noted in Joes Valley Reservoir downstream, however macroinvertebrate populations could be affected which could reduce the numbers of invertebrates drifting downstream towards Joes Valley Reservoir which could influence the fisheries present. If water is diverted away from Upper Joes Valley, water-dependant terrestrial and aquatic wildlife species associated with wetland/riparian areas would be affected.

Some springs that supply flow to Crandall Creek, Blind Canyon Creek, and the South Fork of Horse Creek could be affected. It is however, expected that any changes in flow would be minimal due to the healing potential of cracks and lithologic layers that perch permeable aquifers. Some changes in sediment production could result from subsidence. An increase in sediment production could impact the very popular trout fishery in Huntington Creek by reducing available spawning habitat.

The Northern Goshawk and Northern Three-toed woodpecker (and their habitat) are the most likely listed Sensitive species to exist within and adjacent to the tract. If the Three-toed woodpecker occurs in the area, impacts due to subsidence would be minimal. Water is a critical component of goshawk habitat. Diversion of water induced by subsidence could adversely impact goshawk habitat.

A Biological Evaluation/Assessment was completed for the project, has been reviewed by the U.S. Fish and Wildlife Service (Appendix C). The Biological Evaluation/Assessment determined that there would be no effect to listed or proposed Threatened and Endangered species or their habitat.

Due to the potential for affecting water flow in the wetland areas and the Indian Creek drainage in Upper Joes Valley, potential impacts to aquatic wildlife species are considered to be high. Potential impacts to terrestrial species are considered to be moderate due to the potential for changes in springs and flow to the wetland/riparian areas in Upper Joes Valley.

ALTERNATIVES C AND E

These alternatives would be the same as Alternatives B and D except that the 400 acre western strip would be excluded from the tract and second mining would be restricted to prevent focusing subsidence along the Joes Valley Fault. Mining would be allowed in some areas that supply water to Upper Joes Valley but loss of flow to Upper Joes Valley and Indian Creek is not expected. Subsidence could result in some changes in sediment production.

Potential impacts to aquatic wildlife would be moderate due to potential changes to sediment production in Huntington Creek from subsidence. Potential impacts to terrestrial wildlife would be considered low because impacts to the wetland/riparian area in Upper Joes Valley would be minimized or prevented.

H. SHORT-TERM USE OF MAN'S ENVIRONMENT VS. LONG-TERM PRODUCTIVITY

ALTERNATIVE A

There would be no impacts to the productivity of Forest resources other than coal because the tract would not be leased. This alternative would not have potential to extend the life of the existing Crandall Canyon Mine or provide the associated socioeconomic benefits.

ALTERNATIVES B AND D

The life of the Crandall Canyon Mine and the associated socioeconomic benefits would be extended within the short-term; 19 years for Alternative B, and 17 years for Alternative D. The productivity of environmental resources would be affected as discussed for the individual resource categories.

ALTERNATIVES C AND E

The life of the Crandall Canyon Mine and the associated socioeconomic benefits would be extended within the short-term; 18 years for Altarnative C, and 16 years for Alternative E. The productivity of environmental resources would be affected as discussed for the individual resource categories.

I. IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES

ALTERNATIVE A

Under this alternative the tract would not be offered for lease. There would be no irreversible or irretrievable commitments of environmental resources.

For the purposes of this analysis, it is assumed that the proposed tract, or portion thereof, would not be evaluated or offered for leasing again in the

foreseeable future. In this case, the coal would be bypassed. Selection of this alternative would, therefore, involve an irretrievable commitment of the coal reserves and associated socioeconomic benefits. It is not possible to determine whether or not the coal would be recovered at some time in the future. Once the Crandall Canyon Mine is closed and abandoned, the potential to safely and economically mine the reserves in the tract would be substantially reduced, if not precluded.

ALTERNATIVES B AND D

If the tract is leased under either of these alternatives, mining of the coal would take place. Since coal is not a renewable resource, extraction and use of coal reserves would constitute an irreversible commitment of the resource. The coal would not be available for use by future generations. In addition, the use of energy and other resources needed to extract the coal reserves would be an irretrievable and irreversible commitment of these resources.

The extraction of coal reserves would involve impacts to other resources as previously discussed under the individual resource categories. Subsidence and the related impacts to the hydrologic system would be irretrievable and irreversible. It would not be possible to reverse changes to the topography and hydrologic system once they occur. If subsidence were to be focused along the Joes Valley Fault and water is diverted from the Indian Creek drainage, this impact would probably be irreversible. Other impacts related to subsidence would, however, be irretrievable but not irreversible. For example, water needed in an area for wildlife and livestock could be replaced if a specific watering source is lost. A new spring could be developed, a water well could be drilled, or a stock pond could be constructed to provide an alternative watering source. Increases in sediment production and associated decreases in the quality of spawning habitat in Huntington Creek would be irretrievable but potentially not irreversible. Measures could be required and taken to improve watershed conditions and spawning habitat in the affected area or adjacent areas to mitigate the impact.

The impacts to recreation and transportation would be irretrievable but not irreversible, since they could be reversed by other actions.

ALTERNATIVES C AND E

The commitments of resources would be essentially the same as discussed above except that potential irreversible impacts to water flow and wildlife in Indian Creek would be minimized or prevented.

J. CUMULATIVE IMPACTS

It is not possible to detect and quantify all of the cumulative impacts because accurate records of man's activity throughout prehistoric and historic times are not available. This analysis is limited in scope to the Huntington Canyon and Indian Creek drainages from the proposed lease tract to the downstream reaches likely to be affected by the proposed leasing and potential mining. Since environmental resources within the ecosystems are inter-dependent, the discussion will not be broken down into individual resource categories. The socioeconomic and environmental resources will, however, be discussed

separately. Anticipated impacts after mitigation for each resource were discussed at the beginning of this chapter. Several of the issues discussed throughout the analysis were identified because of the cumulative effects of existing uses and management emphasis and the potential effects of the proposed coal leasing.

Future surface disturbing projects associated with coal leasing and mining as well as other resource uses and developments are inevitable, however, no such proposals are ripe for analysis at this time. The analysis of cumulative impacts was, therefore, limited to the proposed action and alternatives.

Socioeconomics

Coal mining was an important factor in the development of the local socioeconomic infrastructure and continues to be a dominant element in the local economy and lifestyle. Since approximately 85% of the coal mined in Utah is from the Wasatch Plateau Coal Field, the socioeconomic benefits of coal mining are also important Statewide, and to a lesser degree Nationwide.

The socioeconomic setting of the influence zone for the project was described in Chapter 3, Affected Environment. The setting described in Chapter 3 is the result of the existing cumulative level of coal mining and other activities that have occurred to date, including management of National Forest resources, agriculture, and industry.

The Uinta-Southwestern Utah Coal Region Round Two Final Environmental Impact Statement, 1983, predicted that Alternative Two (Preferred Alternative) would result in a steady increase in population through the year 2000 from the 1982 baseline population. An increase in population of 16,700 (total for Carbon, Emery, Sanpete, and Sevier Counties) was predicted by the year 2000. This was expected to result in considerable stress on the county infrastructures. In actuality, all or portions of only 6 of the 22 coal lease tracts analyzed under this alternative have been leased. The populations have decreased from the 1982-1983 peak due to the soft coal market and advances in mining technology. Improved methods and new technology have resulted in increased production with fewer miners (including support services).

ALTERNATIVE A

The life of the Crandall Canyon Mine would not be extended unless lands to the south of the existing permit area are offered and acquired by Genwal Coal Company. Closure of the mine in 1997 would decrease employment and the associated economic benefits. The bonus bid and coal royalties would not be generated. This impact would be more severe locally than Statewide or Nationally, but would be evident (See Chapter 4, Socioeconomics and Mining).

ALTERNATIVES B, C, D, and E

The mine life would be extended as discussed in Chapter 4, Socioeconomics and Mining. The bonus bid and coal royalties generated would be proportionate to the amount of reserves leased and mined under each of the alternatives. The overall economic benefits and differences in benefits between the four alternatives would be more important locally than Statewide of Nationally. The overall benefits would be evident Statewide and Nationally but the differences

between the four alternatives would be minimal at this broad level.

Environmental/Physical Resources

Huntington Canyon has been affected and continues to be affected by historic (abandoned) and active mining operations and related surface disturbance and subsidence. All of the surface facilities associated with abandoned mine workings in Huntington Canyon and it's tributaries have been reclaimed by the mine operators or by the Utah Division of Oil, Gas, and Mining under the Abandoned Mined Lands Program. Even though it is known that historic abandoned mining operations caused subsidence, there are no evident surface expressions of subsidence, such as cracks or troughs. Current mining operations include the Genwall Coal Company Crandall Canyon Mine, PacifiCorp Deer Creek Mine, and Co-Op Mining Company Trail Canyon (inactive, under reclamation) and Bear Canyon Mines located downstream of the proposed tract near the mouth of Huntington Canyon. Subsidence associated with these mines is being monitored as required by lease stipulations and the approved mining and reclamation plans. Trough subsidence on East Mountain associated with the PacifiCorp Mines has reached 13 feet centered over blocks of longwall panels involving two overlapping extracted coal seams. Due to the mountainous uneven terrain, subsidence troughs are usually not evident. The visual effects of subsidence have been limited to rockfalls along escarpments and surface cracks. Most cracks heal naturally within a few years. Other cracks require reclamation.

There is concern about the cumulative effects of traffic and dispersed recreation in Huntington Canyon along State Highway 31. A transportation analysis has shown that mining related traffic volumes will not be increased due to the proposed action but the duration would be extended with the associated increased mine life. At the present time mine traffic and recreation traffic have not exceeded maximum design capacity. Any increases in traffic volumes would increase the potential for accidents and decrease the quality of dispersed recreation in the canyon. It is anticipated that traffic will steadily increase over the years with the growth of recreation use and could, at some time during the life of the Crandall Canyon Mine, exceed design capabilities.

Ground and surface water quality is described in Chapter 3 under "Hydrology". The potential impacts of each of the alternatives are described in Chapter 4 under "Hydrology". It is certain that Man's activities in Indian Creek and Huntington Creek have affected flow and quality. Water is impounded in several reservoirs, is diverted for culinary, agricultural, and industrial use, and has been affected by construction or roads, grazing, recreation, and mining. Water quality usually meets or exceeds State water quality standards for the identified beneficial uses, including culinary, industrial, agricultural, recreation, and cold water fisheries. Occasional violations of standards for fecal coliform bacteria have been detected in Huntington Creek, probably caused by concentrated dispersed recreation. Total dissolved solids concentrations increase rapidly in Huntington Creek where flows encounter the saline Mancos Shale Formation and agricultural/industrial lands below the Forest boundary.

Water monitoring associated with the approved mining and reclamation plans for the Deer Creek, Trail Canyon, and Bear Canyon Mines shows that there have been some increases in water flow and decreases in water quality at or below the Forest boundary related to mine water discharge into Huntington Creek. Water

encountered in underground mine workings is treated and discharged into Huntington Creek under existing Utah Non-Point Pollution Discharge Permits. The Cumulative Hydrologic Impact Assessments for the mines have determined that there would not be any changes in the water balance due to mining. There is however, some unsubstantiated evidence that the Deer Creek Mine could be diverting water from the Cottonwood Creek drainage to the Huntington Canyon drainage. An investigation is being conducted by water users and the State of Utah. None of the proposed alternatives is expected to affect water resources in the Cottonwood Canyon drainage.

Huntington Creek and Indian Creek support trout fisheries. Increases in sediment and other substances due to the construction and maintenance of roads, grazing, fires, recreation, and mining have undoubtedly occurred. Mining induced subsidence could cause accelerated erosion and sediment production. Mine operators are, however, required to develop mitigations to assure that there are no net additions of sediment into water supplies. Sediment will continue to affect spawning habitat. The fisheries and spawning habitat in these drainages are of high quality and are expected to remain of high quality.

The Utah-Southwestern Utah Coal Region Round Two Final Environmental Impact Statement, 1983 analyzed the cumulative of several alternatives for coal leasing. Under Alternative 2 (Preferred Alternative), the impacts of leasing 22 coal lease tracts were analyzed. All or portions of only 6 of the tracts have been leased under the Lease-on-Application process for the purposes of extending the life of already existing mines. The Crandall Canyon tract was not analyzed under any of the alternatives, but it has been determined that the level of predicted cumulative impacts would be generally consistent with those predicted in the FEIS, but substantially less in terms of magnitude.

ALTERNATIVE A

No changes to the existing conditions are expected.

This alternative is consistent with Forest Plan management prescriptions for the area and Forest-wide goals for non-mineral resources. It could be considered to be inconsistent with Forest Plan management prescriptions that allow mineral activities, with appropriate mitigations, if the management prescriptions and goals for other resources can be met.

ALTERNATIVES B and D

The additional impacts associated with these alternatives could result in decreasing the flow of water in the wet meadow/riparian area and Indian Creek in Upper Joes Valley. Riparian habitat, spawning habitat, and water rights could be altered (See the discussion of impacts for individual resource categories). Terrestrial and aquatic species population levels and goals could be adversely affected by decreased water flow and increased erosion/sediment.

Conflicts between recreation, general transportation, and mining related traffic could increase with increasing recreation use of Huntington Canyon and State Highway 31.

Land stability could be affected along the west slope of East Mountain, triggering new landslides or aggravating existing landslides. This would

increase erosion and sediment production. Visual quality would be decreased but visual quality objectives would be met.

These alternatives would not be consistent with management prescriptions for the project area and Forest-wide goals in the Forest Plan or resource production levels or thresholds established in the Forest Plan and Forest Plan FEIS.

ALTERNATIVES C AND E

There would be minimal, if any, changes to water flow in Indian Creek or Huntington Creek. Some changes in spring flow could occur but these changes are expected to be localized. Detectable impacts to water rights are not expected. Subsidence could result in sediment production increases that could affect spawning habitat, however, the fisheries and spawning habitat should remain of high quality. Impacts to terrestrial wildlife habitat are not expected to impact populations or population goals.

Conflicts between recreation, general transportation, and mining related traffic could increase with increasing recreation use of Huntington Canyon and State Highway 31.

Subsidence along the west slope of East Mountain could trigger new isolated landslides or aggravate existing landslides. The potential for this to occur is low due to measures under this alternative that would reduce the magnitude of subsidence and prevent the potential for focusing subsidence along the Joes Valley Fault. Slight increases in erosion and sediment production could result. Visual quality objectives would be met.

Alternative C would be consistent with management prescriptions for the project area and Forest-wide goals in the Forest Plan and resource production levels or thresholds established in the Forest Plan and Forest Plan FEIS.

Alternative E would be consistent with the Forest Plan and Forest Plan FEIS, except for excluding the Candland Mountain SPR Management Unit from the lease. The analysis has determined that leasing and subsidence of the SPR would not conflict with Forest Plan management prescriptions for providing for a quality semiprimitive recreation experience.

CHAPTER V - PREPARERS AND PUBLIC INVOLVEMENT

A. LIST OF PREPARERS

The following individuals from the Manti-La Sal National and the BLM formulated the five alteranatives considered in this document in response to the issues and the expected environmental effects:

SPECIALIST	SPECIALTY	ID TEAM ROLE
Brent Barney	Engineering	Member, FS
Paul Burns	Fishery Biologist	Member, FS
Kevin Draper	Recreation/Visuals	Member, FS
Abe Elias	Mining Engineering	Member, BLM
Dale Harber	Minerals/Geology	Member, FS
Dennis Kelly	Hydrologist	Member, FS
Pete Kilbourne	Minerals/Geology	Consultant, FS
Dan Larsen	Soils Scientist	Consultant, FS
Stan McDonald	Cultural Resources	Consultant, FS
Max Nielson	Socioeconomics	Member, BLM
Walter Nowak	Minerals/Geology	Team Leader, FS
Tom Rasmussen	Minerals/Geology	Consultant, BLM
Steve Romero	TE&S/Wildlife	Member,FS
Bob Thompson	TE&S/Plants/Range	Consultant, FS

B. PUBLIC INVOLVEMENT

Public involvement is discussed in Chapter II, under Public Participation. This section lists the 48 agencies, groups and individuals consulted during the EA process:

Utah Division of Wildlife Resources	Utah Division of Water Rights
Emery County Commissioners	Emery Water Conservancy District
Southeastern Utah Association of Local Governments	Huntington - Cleveland Irrigation Company
Utah Wilderness Association	Soil Conservation Service
Slick Rock Council	Owen M. Peel
Charles Mckay	David Peel
J. D. Covert, Et Al	Wayne Poulsen
Division of State Lands and Forestry	Utah Department of Health
Utah Riparian Coalition	American Fisheries Society
Moab District Office, BLM	Utah State Office, BLM
Price Coal Office, BLM	Division of Oil, Gas and Mining
Genwal Coal Company	Office of Surface Mining
Cottonwood Irrigation Company	Nielsen & Senior, Attorneys
Energy West Mining Company	Mining and Energy Resources, Inc.
Southern Utah Wilderness Alliance	City of Castle Dale

City of Ferron	City of Orangeville
Emery County Economic Development	Trail Mountain Livestock Association
Utah Associated Municipal Water Systems	Senator Orrin Hatch's Office
Sportsmen for Quality Wildlife	East Carbon Wildlife Federation
Utah Department of Natural Resources	Bureau of Water Pollution Control
PacifiCorp Electric Operations	Maughan Guymon
Lee McElprang	Avra M. Smith
Meridian Oil, Inc.	Wade K. Jensen
Utah Department of Transportation	Carbon County Commissioners

REFERENCES

USDA, Forest Service, Manti-La Sal National Forest Land and Resource Management Plan and Final Environmental Impact Statement, November, 1986.

USDI, Bureau of Land Management, San Rafael Proposed Resource Management Plan, July, 1989; and Final Environmental Impact Statement, May, 1991.

USDA, Forest Service, Decision Memo, Genwal Coal Company Special Use Permit to Subside Unleased Federal Coal - Crandall Canyon Mine Permit Area, April, 1992.

USDA, Forest Service, Decision Memo, Genwal Coal Company Underground Access Right-Of-Way, June, 1990.

USDI, Bureau of Land Management, Uinta-Southwestern Utah Coal Region Round Two, Final Environmental Impact Statement, October, 1983.

USDA, Forest Service, Environmental Assessment, Crandall Canyon Mine, Genwal Coal Company, Inc., Emery County, Utah, January, 1982.

State of Utah Natural Resources, Division of Oil, Gas and Mining, 1989; Gentry Mountain Cumulative Hydrologic Impact Assessment; Bear Canyon Mine, ACT/015/025; Deer Creek Mine Waste Rock Storage Facility, ACT/015/018; Hiawatha Mines Complex, ACT/007/011; Star Point Mines, ACT/007/006; Trail Canyon Mine, ACT/015/025; Carbon County and Emery County, Utah, AT102/47-73.

State of Utah Natural Resources, Division of Oil, Gas and Mining, 1989, Cumulative Hydrologic Impact Assessment, Genwal Coal Company, Crandall Canyon Mine, ACT/015/032, Emery County, Utah.

State of Utah Natural Resources, Division of Oil, Gas and Mining, 1991, Cumulative Hydrologic Impact Assessment, NEICO State Leases ML-21568 and ML-21569 (Genwal Coal Company) Crandall Canyon Mine, ACT/015/032, Emery County, Utah.

Genwal Coal Company, 1992, Genwal Coal Company, Crandall Canyon Mine, Crandall/Huntington, Canyon Areas, Data Adequacy - LBA No. 9 (UTU-68082), Submitted to: Manti-La Sal National Forest, Price, Utah 84501.

PacifiCorp Technical Services Report CE0057, R. Fry, 1993, Central Engineering, Annual Subsidence Monitoring Report, East Mountain Property, 1992.

Danielson, T. W., ReMillard, M. D., and Fuller, R. H., 1981, Hydrology of the Coal-Resource Areas in the Upper Drainages of Huntington and Cottonwood Creeks, Central Utah; U.S. Geological Survey, Open-File Report 81-539.

Appendix A - Tract Delineation Report

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Utah State Office
324 South State, Suite 301
Salt Lake City, Utah 84111-2303

TAKE PRIDE IN AMERICA

IN REPLY REFER TO

3425
UTU-68082
(UT-922)

August 12, 1992

Mr. George Morris
Forest Supervisor
Manti-LaSal National Forest
599 West Price River Drive
Price, Utah 84501

Dear Mr. Morris:

The Tract Delineation Report for the Crandall Canyon Tract has been completed and signed by all team members. A copy of this report with the proprietary data removed is enclosed for your use in preparation of the environmental assessment for the tract.

As we indicated in our letter of April 13, 1992, BLM would like to continue with the timely processing of this application. Genwal Coal Company is presently mining on State lands adjacent to the tract, and BLM would like to be able to proceed with leasing this tract before their mining operations proceed to the point that they negatively affect the recovery of the Federal coal in the tract. We appreciate the Forest Service's efforts to proceed with the environmental assessment and enable the tract to be leased in a timely fashion.

The BLM is prepared to provide any necessary technical support that may be needed for your environmental assessment. Please let us know what is needed. We would also appreciate being kept informed of the progress of your effort. If BLM can provide any further assistance, please contact Max Nielson in this office.

Sincerely,

Douglas M. Koza

Douglas M. Koza
Deputy State Director
Mineral Resources

Enclosure

cc: [illegible]
cc P. Kilbourne

UINTA-SOUTHWESTERN UTAH COAL REGION
BUREAU OF LAND MANAGEMENT

TRACT DELINEATION REVIEW REPORT

Lease by Application UTU-68082, Genwal Coal Co.

Introduction

Genwal Coal Co. has applied for a coal lease on unleased Federal coal lands adjacent to their existing Crandall Canyon Mine property in Emery County, Utah (Figure 1). The Genwal application overlaps the northern portion of an earlier coal lease application submitted by Mining Energy Resources, Inc. (MERI).

The application area is contained within the Wasatch Plateau Known Recoverable Coal Resource Area. The surface of the area is administered by the Manti-La Sal National Forest and the mineral estate is administered by the Bureau of Land Management. The lands within the application area were not included in any of the tracts that were delineated for the second round tract delineation effort for the Uinta-Southwestern Utah Coal Region.

The purpose of this report is to review the geologic and coal resource information from the application area and recommend a tract configuration that meets the Federal coal leasing data adequacy standards and provides for logical and timely development of the coal reserves on the tract.

Tract Configuration

The tract applied for by Genwal Coal Company could be accessed from their existing Crandall Canyon Mine. With present surface management limitations, no independent access is feasible for the Federal coal resources to the north of Crandall Canyon and to the west of Genwal Coal Company's state leases.

A future independent lease tract could be delineated in the Crandall Canyon area which would encompass the lands to the south of the existing Genwal mine property. To accommodate such a delineation, it is necessary to drop part of the lands applied for by Genwal in T. 16 S., R. 6 E., Section 1. This will provide independent access into these lands from Crandall Canyon. In addition, the potentially minable coal resources to the west of the application area should be added to the tract. It is recommended that the revised tract be delineated as shown on Figure 1. The proposed tract is described as follows:

T. 15 S., R. 6 E., SLM,
Section 25, S½;
Section 26, S½;
Section 27, E½SE¼;
Section 34, lot 1, E½NE¼, NE¼SE¼;
Section 35, lots 1-4, N½, N½S½.

T. 15 S., R. 7 E., SLM,
Section 30, lots 7-12, SE¼;
Section 31, lots 1-12, NE¼, N½SE¼, SW¼SE¼.

T. 16 S., R. 6 E., SLM,
Section 1, lots 1-12, SW¼;
Section 3, lot 1, SE¼NE¼, E½ SE¼.

T. 16 S., R. 7 E., SLM,
Section 6, lots 2-4, SW¼ NE¼.

Containing 3,384.02 acres more or less.

Geologic Setting

A stratigraphic section representative of the application area is shown on Figure 2. In this area, coal beds of economic interest occur in the lower one-third of the Upper Cretaceous Blackhawk Formation. The relationship between the coal beds in the vicinity of the tract is shown on Figure 3. Based on an analysis of drill hole information from the area, there is only one coal bed of economic interest within the application area. This coal bed, the Hiawatha bed, is the lowermost minable coal bed in the Central Wasatch Plateau .

As is shown on an isopach map (Figure 4), the Hiawatha bed is > 5 feet thick over the entire tract except for the northeastern corner. To the northeast, drill hole and outcrop information suggests that the Hiawatha bed may be missing. This thinning of the Hiawatha bed has been attributed to a northeast-southwest trending paleo-channel system. To the west of this system, the Hiawatha bed thickens to more than 12 feet.

The structure of the area is relatively simple with the strata generally dipping about 8 degrees to the northwest (Figure 5). The western edge of the tract is bounded by Joes Valley fault. This fault is a major north-south trending normal fault with over 2,000 feet of displacement. No additional faulting has been identified within the tract. Overburden on the Hiawatha coal bed within the tract area ranges from 0 where it is expected to outcrop to the north to almost 2400 feet.

Coal Data Adequacy

The coal resources of the tract are defined by drilling on or adjacent to the tract. Drill hole data are supplemented by coal seam measurements taken in the Crandall Canyon mine on State leases adjacent to the central part of the tract. The drilling and mine measurements provide data of sufficient quality and quantity to meet the Uinta-Southwestern Utah Coal Region data standard that 80 percent of the tract's resources be demonstrated.

Coal Resources/Reserves

The tract as delineated contains 3,384.03 acres more or less. Given a minimum minable height of 5 feet, one coal bed is potentially minable within the tract. The in-place reserve base for this coal bed is summarized as follows:

Seam Name	Coal Area (acres)	Average Thickness (feet)	Reserve Base (million tons)
Hiawatha	2,521.7	8	36.3

Assuming a recovery factor of 50 percent, the tract contains about 18 million tons of recoverable coal. These resource/reserve estimates are preliminary and could be changed as the more detailed geologic and engineering report is prepared for the economic evaluation of the tract.

Coal Quality

The coal on this tract appears to be good quality steaming coal. As-received analyses of 11 Hiawatha coal samples from the vicinity of the tract are summarized as follows:

Seam	Moist. %	Ash %	V.M. %	F.C. %	Sulfur %	Btu
Hiawatha	4.08	8.75	42.45	45.31	0.63	12,790

Based on these analyses, the apparent rank of the Hiawatha bed is High-Volatile C Bituminous Coal.

Tract Delineation Team — Date

James F. Kohler, Geologist
BLM, Utah State Office — 4/10/92

Jeff Clawson, Mining Engineer
BLM, Utah State Office — 4/14/92

Gary Johnson, Mining Engineer
BLM, Price Coal Office — 6/29/92

Tom Rasmussen, Geologist
BLM, Price Coal Office — 6/29/92

Walt Nowak, Geologist
Manti-La Sal National Forest — 6/29/92

Roger Bon, Geologist
Utah Geological Survey — 8/10/92

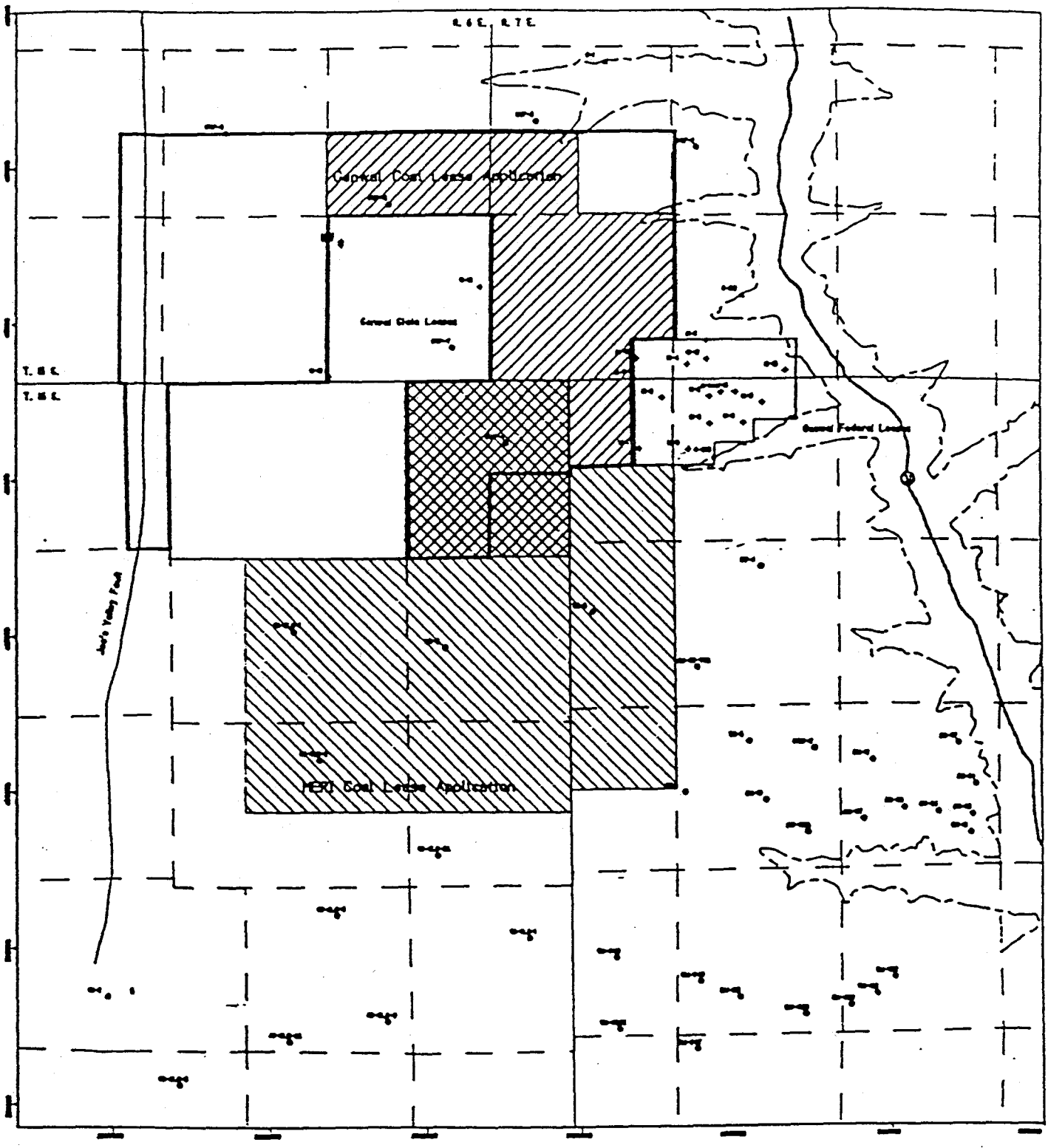
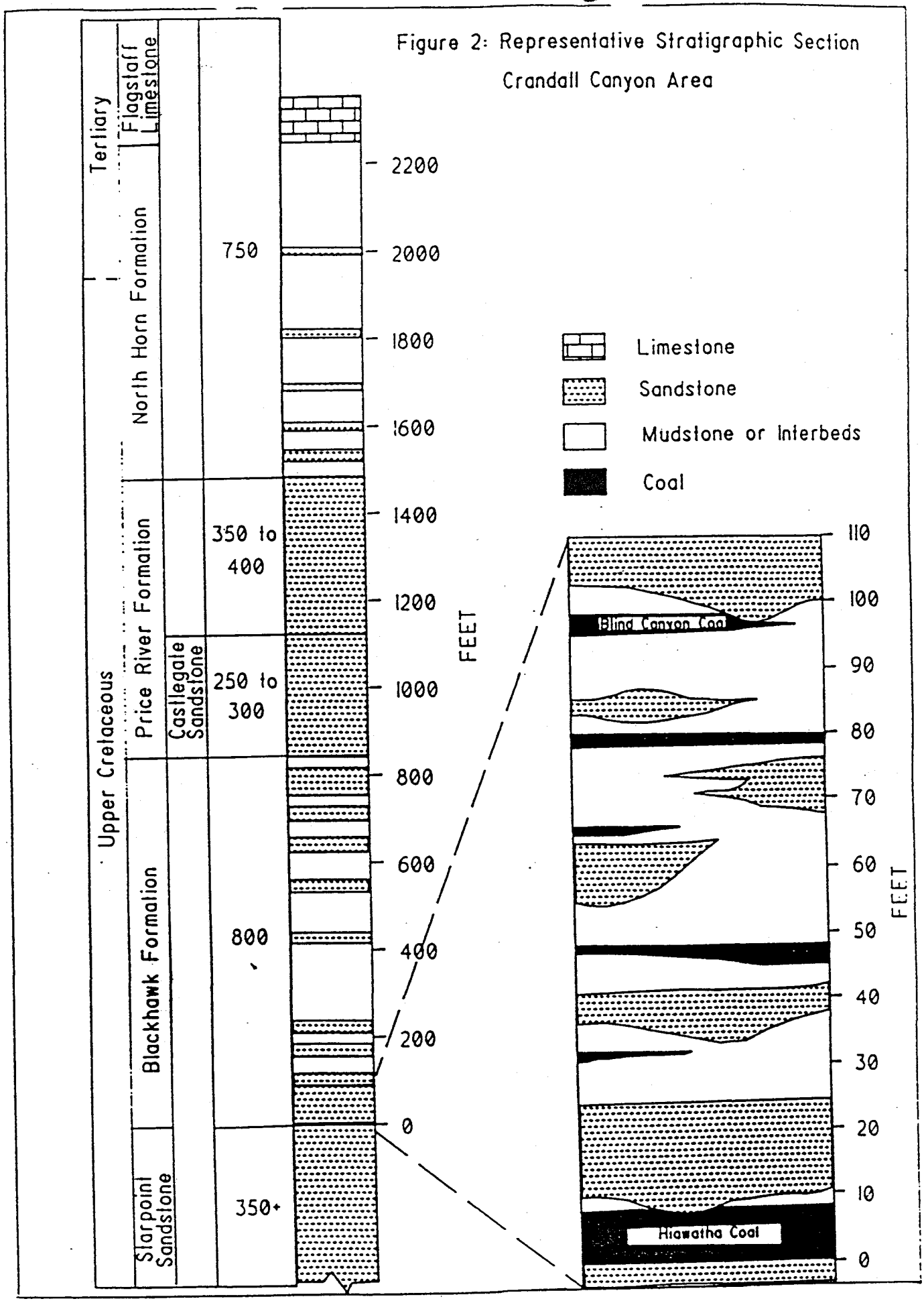


Figure 1: Coal Lease Applications, Crandall Canyon Area, Utah

Figure 2: Representative Stratigraphic Section

Crandall Canyon Area



Appendix B - Special Stipulations

SPECIAL STIPULATIONS

Federal Regulations 43 CFR 3400 pertaining to Coal Management make provisions for the Surface Management Agency, the surface of which is under the jurisdiction of any Federal agency other than the Department of Interior, to consent to leasing and to prescribe conditions to insure the use and protection of the lands. All or part of this lease contain lands the surface of which are managed by the United States Department of Agriculture, Forest Service - Manti-La Sal National Forest.

The following stipulations pertain to the Lessee responsibility for mining operations on the lease area and on adjacent areas as may be specifically designated on National Forest System lands.

Forest Service Stipulation #1.

Before undertaking activities that may disturb the surface of previously undisturbed leased lands, the Lessee may be required to conduct a cultural resource inventory and a paleontological appraisal of the areas to be disturbed. These studies shall be conducted by qualified professional cultural resource specialists or qualified paleontologists, as appropriate, and a report prepared itemizing the findings. A plan will then be submitted making recommendations for the protection of, or measures to be taken to mitigate impacts for identified cultural or paleontological resources.

If cultural resources or paleontological remains (fossils) of significant scientific interest are discovered during operations under this lease, the Lessee prior to disturbance shall immediately bring them to the attention of the appropriate authority. Paleontological remains of significant scientific interest do not include leaves, ferns or dinosaur tracks commonly encountered during underground mining operations.

The cost of conducting the inventory, preparing reports, and carrying out mitigating measures shall be borne by the Lessee.

Forest Service Stipulation #2.

If there is reason to believe that Threatened or Endangered (T&E) species of plants or animals, or migratory bird species of high Federal interest occur in the area, the Lessee shall be required to conduct an intensive field inventory of the area to be disturbed and/or impacted. The inventory shall be conducted by a qualified specialist and a report of findings will be prepared. A plan will be prepared making recommendations for the protection of these species or action necessary to mitigate the disturbance.

The cost of conducting the inventory, preparing reports and carrying out mitigating measures shall be borne by the Lessee.

Forest Service Stipulation #3.

The Lessee shall be required to perform a study to secure adequate baseline data to quantify the existing surface resources on and adjacent to the lease area. Existing data may be used if such data are adequate for the intended purposes. The study shall be adequate to locate, quantify, and demonstrate the interrelationship of the geology, topography, surface hydrology, vegetation and wildlife. Baseline data will be established so that future programs of observation can be incorporated at regular intervals for comparison.

Forest Service Stipulation #4.

Powerlines used in conjunction with the mining of coal from this lease shall be constructed so as to provide adequate protection for raptors and other large birds. When feasible, powerlines will be located at least 100 yards from public roads.

Forest Service Stipulation #5.

The limited area available for mine facilities at the coal outcrop, steep topography, adverse winter weather, and physical limitations on the size and design of access roads, are factors which will determine the ultimate size of the surface area utilized for the mine. A site-specific environmental analysis will be prepared for each new mine site development and for major improvements to existing developments to examine alternatives and mitigate conflicts.

Forest Service Stipulation #6.

Consideration will be given to site selection to reduce adverse visual impacts. Where alternative sites are available, and each alternative is technically feasible, the alternative involving the least damage to the scenery and other resources shall be selected. Permanent structures and facilities will be designed, and screening techniques employed to reduce visual impacts and, where possible, achieve a final landscape compatible with the natural surroundings. The creation of unusual, objectionable, or unnatural landforms and vegetative landscape features will be avoided.

Forest Service Stipulation #7.

The Lessee shall be required to establish a monitoring system to locate, measure and quantify the progressive and final effects of underground mining activities on the topographic surface, underground and surface hydrology and vegetation. The monitoring system shall utilize techniques which will provide a continuing record of change over time and an analytical method for location and measurement of a number of points over the lease area. The monitoring shall incorporate and be an extension of the baseline data.

Forest Service Stipulation #8.

The Lessee shall provide for the suppression and control of fugitive dust on haul roads and at coal handling and storage facilities. On Forest Development Roads (FDR), Lessees may perform their share of road maintenance by a commensurate share agreement if a significant degree of traffic is generated that is not related to their activities.

Forest Service Stipulation #9.

Except at specifically approved locations, underground mining operations shall be conducted in such a manner so as to prevent surface subsidence that would: (1) cause the creation of hazardous conditions such as potential escarpment failure and landslides, (2) cause damage to existing surface structures, and (3) damage or alter the flow of perennial streams. The Lessee shall provide specific measures for the protection of escarpments, and determine corrective measures to assure that hazardous conditions are not created.

Forest Service Stipulation #10.

In order to avoid surface disturbance on steep canyon slopes and to preclude the need for surface access, all surface breakouts for ventilation tunnels shall be constructed from inside the mine, except at specific approved locations.

Forest Service Stipulation #11.

If removal of timber is required for clearing of construction sites, etc., such timber shall be removed in accordance with the regulations of the surface management agency.

Forest Service Stipulation #12.

The coal contained within, and authorized for mining under this lease shall be extracted only by underground mining methods.

Forest Service Stipulation #13.

Existing Forest Service owned or permitted surface improvements will need to be protected, restored, or replaced to provide for the continuance of current land uses.

Forest Service Stipulation #14.

In order to protect big-game wintering areas, elk calving and deer fawning areas, sagegrouse strutting areas, and other key wildlife habitat and/or activities, specific surface uses outside the mine development area may be curtailed during specified periods of the year.

Forest Service Stipulation #15.

Support facilities, structures, equipment, and similar developments will be removed from the lease area within two years after the final termination of use of such facilities. Disturbed areas and those areas previously occupied by such facilities will be stabilized and rehabilitated, drainages re-established, and the areas returned to a premining land use.

Forest Service Stipulation #16.

The Lessee, at the conclusion of the mining operation, or at other times as surface disturbance related to mining may occur, will replace all damaged, disturbed or displaced corner monuments (section corners, 1/4 corners, etc.), their accessories and appendages (witness trees, bearing trees, etc.), or restore them to their original condition and location, or at other locations that meet the requirements of the rectangular surveying system. This work shall be conducted at the expense of the Lessee, by a professional land surveyor registered in the State of Utah, and to the standards and guidelines found in the Manual of Surveying Instructions, United States Department of the Interior.

Forest Service Stipulation #17.

The Lessees, at their expense, will be responsible to replace any surface water identified for protection, that may be lost or adversely affected by mining operations, with water from an alternate source in sufficient quantity and quality to maintain existing riparian habitat, fishery habitat, livestock and wildlife use, or other land uses.

Forest Service Stipulation #18.

STIPULATION FOR LANDS OF THE NATIONAL FOREST SYSTEM UNDER JURISDICTION OF THE DEPARTMENT OF AGRICULTURE

The licensee/permittee/lessee must comply with all the rules and regulations of the Secretary of Agriculture set forth at Title 36, Chapter II, of the Code of Federal Regulations governing the use and management of the National Forest System (NFS) when not inconsistent with the rights granted by the Secretary of the Interior in the license/permit/lease. The Secretary of Agriculture's rules and regulations must be complied with for (1) all use and occupancy of the NFS prior to approval of a permit/operation plan by the Secretary of Interior, (2) uses of all existing improvements, such as Forest Development Roads, within and outside the area licensed, permitted or leased by the Secretary of Interior, and (3) use and occupancy of the NFS not authorized by a permit/operating plan approved by the Secretary of the Interior.

All matters related to this stipulation are to be addressed to:

Forest Supervisor
Manti-La Sal National Forest
599 West Price River Drive
Price,Utah 84501

Telephone No.: 801-637-2817

who is the authorized representative of the Secretary of Agriculture.

_____
Signature of Licensee/Permittee/Lessee

Forest Service Stipulation #19.

The lessee/operator will be required to drill horizontally ahead of the advance of development workings to the west in the vicinity of the Joes Valley Fault zone to locate any faults and determine if they contain significant amounts of water. If significant water is encountered, the operator will be required to take appropriate measures, subject to approval of the Bureau of Land Management and Forest Service, to prevent diverting this water into the mine workings.

STIPULATION SPECIFIC TO ALTERNATIVES C AND E

Forest Service Stipulation #20.

Except at specifically approved locations, mining that would cause subsidence will not be permitted within a zone along the Joes Valley Fault determined by projecting a 22 degree angle-of-draw (from vertical) eastward from the surface expression of the Joes Valley Fault, down to the top of the coal seam to be mined.

STIPULATIONS SPECIFIC TO ALTERNATIVES D AND E

Forest Service Stipulation #21.

Except at specifically approved locations, mining that would cause subsidence will not be permitted within a zone along the boundary of the Candland Mountain SPR (Semiprimitive Recreation) Management Unit determined by projecting a 22 degree angle-of-draw (from vertical) from the SPR boundary, down to the top of the coal seam to be mined.

Appendix C - Biological Evaluation/Assessment

State of Utah
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF WILDLIFE RESOURCES

Michael O. Leavitt
Governor
Ted Stewart
Executive Director
Timothy H. Provan
Division Director

1596 West North Temple
Salt Lake City, Utah 84116-3195
801-538-4700
801-538-4709 (Fax)

September 2, 1993

Mr. George Morris
U.S. Forest Service
Manti-LaSal National Forest
599 West Price River Drive
Price, Utah 84501

Dear George:

The Division of Wildlife Resources (DWR) has reviewed the assessment of the Unsuitability Criteria for Genwal Coal Company's application to lease the Crandall Canyon Tract (Coal Lease Application UTU-68082). As requested, the following are comments on the application of these Unsuitability Criteria.

Criterion No. 10

The DWR concurs with your finding that there is no State designated critical or essential habitat for threatened or endangered plant or animal species found within the proposed lease area.

Criterion No. 15

In our April 5, 1993 comments to the Price Ranger District regarding this lease application, we indicated that the proposed lease area was utilized by such high interest species as elk, deer, black bear, blue grouse and cutthroat trout. The most significant impact to these species would occur if subsidence, resulting from underground mining, caused a decrease in the quality or quantity of water available in the various springs, seeps, and streams found within the proposed lease boundaries. Of particular concern is the potential impact to important fisheries located in Indian Creek and Crandall Creek. Crandall Creek occurs within the main lease area being considered and one of the alternatives which was presented would lease the area directly adjacent to Indian Creek. We would again like to make you aware of our preference for an alternative which would not lease the area adjacent to Indian Creek.

If an investigation has been completed with regard to potential impacts to surface and ground waters which shows there will be no significant impacts, then we concur with your finding that there will be no serious long-term impacts to high interest wildlife. If, however, an analysis of potential impacts to water sources has not been completed, we recommend that such an analysis occur prior to approval of this lease application.

Criterion No. 11

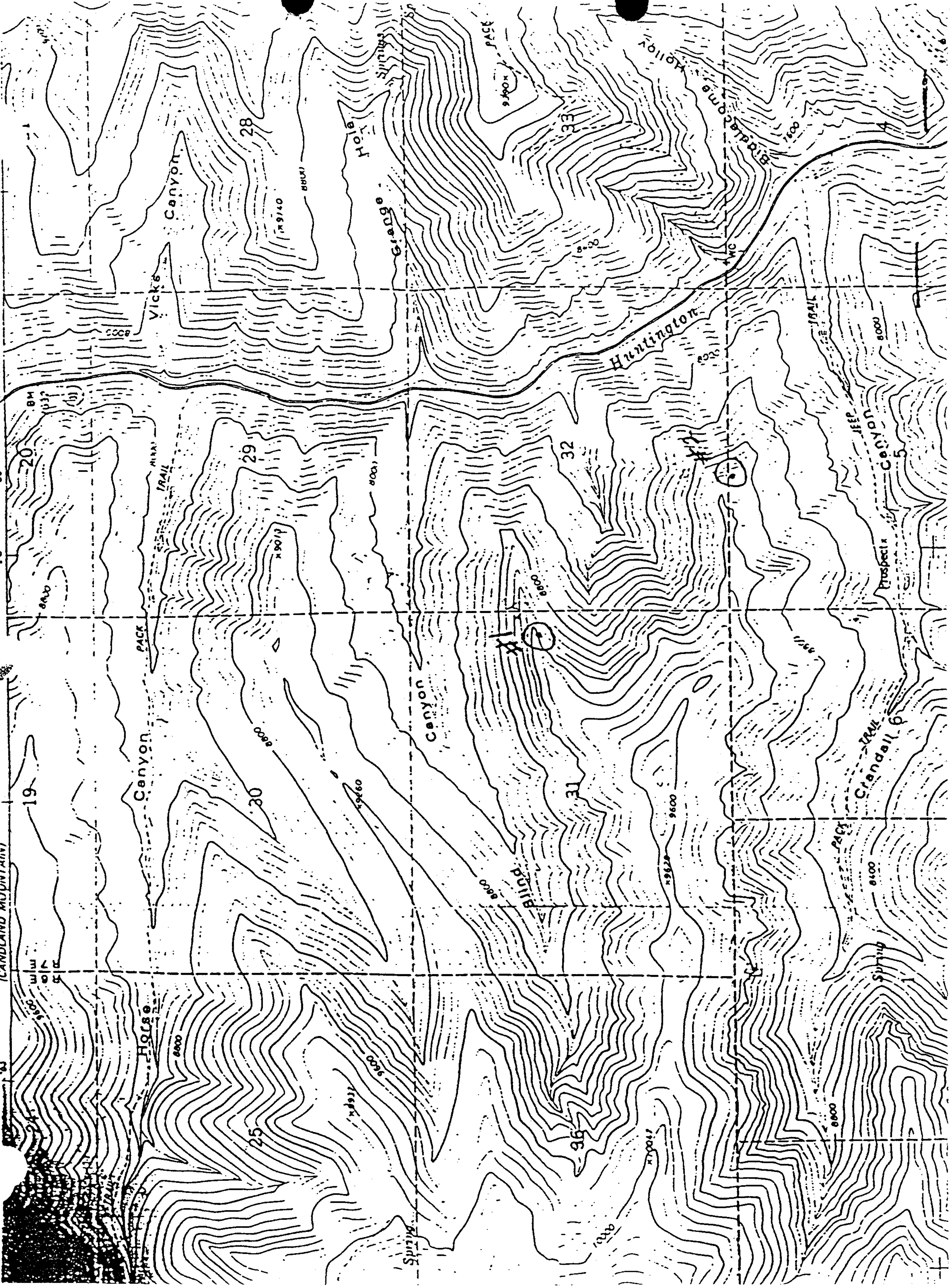
While input on this particular issue was not specifically requested, our information from raptor surveys conducted in this area indicates that an eagle nest is located within the proposed lease boundaries. This nest is located in the SE1/4NE1/4 Sec. 31, T. 15 S., R. 7 E., SLM. We have enclosed a map showing the location of this nest for your information and consideration.

We appreciate the opportunity to review this action and provide our input. If you have any questions or need additional information, please contact Ken Phippen, Regional Habitat Manager (637-3310).

Sincerely,

Timothy H. Provan
Director

Enclosure



Vicks Canyon
Horse Canyon
Blind Canyon
Crandall Canyon
Huntington
Springs
Spring
PACK TRAIL
JEEP TRAIL
Prospect
(CANDLAND MOUNTAIN)
#1
#2
19
20
24
25
28
29
30
31
32
33
36
4
5
6

United States Department of the Interior
FISH AND WILDLIFE SERVICE
UTAH STATE OFFICE
2060 ADMINISTRATION BUILDING
1745 WEST 1700 SOUTH
SALT LAKE CITY, UTAH 84104-5110

MANTI-LA SAL N.F.
FOREST SUPERVISOR
AVIR
ENG./MINERALS
Carson
ECOSYSTEMS
REC/LANDS/WL
ADM. OFFICER
PLANNER
DISTRICT RANGER

cc: D-3
W. Nowak

In Reply Refer To

(ES)

August 26, 1993

George A. Morris, Forest Supervisor
Manti-LaSal National Forest
599 W. Price River Drive
Price, UT 84501

Dear Mr. Morris:

The Fish and Wildlife Service (Service) has received your letter of August 6, 1993 regarding an environmental analysis which is being conducted for Federal Coal Lease Application UTU-68082 (Crandall Canyon Tract). No surface facilities would be constructed in the lease area but there is a potential for mining-induced subsidence of surface features.

The Service has reviewed the attached Biological Assessment/Evaluation (BA) and the application of Unsuitability Criteria of interest to the Service to the leasing process. The Service concurs with the conclusion of the BA that leasing and subsequent project development will have no effects on the endangered bald eagle, the only listed species with potential to occur within the lease area. The Forest Service should note that the Northern goshawk is not proposed for listing by the Service, as is stated in the BA. The goshawk is a candidate species and as such has no protection under the Endangered Species Act at this time.

The Service can concur with the conclusions of the Unsuitability Criteria application as long as there are stipulations incorporated into the coal lease which preclude the subsidence of cliffs, which provide nesting habitat for the golden eagle, prairie falcon, and other migratory birds of high Federal interest within the vicinity of the proposed lease tract.

If you have any further questions, please contact Susan Linner of this office at (801) 975-3630.

Sincerely,

Susan C. Linner
for Robert D. Williams
State Supervisor

United States Department of Agriculture
Forest Service
Manti-La Sal National Forest
West Price River Dr.
Price, Utah 84501
(801)637-2817

Reply to: 2820

Date: August 6, 1993

Mr. Robert D. Williams
U.S. Fish and Wildlife Service
2060 Administration Building
1745 West 1700 South
Salt Lake City, Utah 84104-5110

Dear Mr. Williams:

The Bureau of Land Management and Manti-La Sal National Forest are in the process of conducting an environmental analysis for Federal Coal Lease Application UTU-68082 (Crandall Canyon Tract) filed by Genwal Coal Company. Genwal Coal Company applied for the tract to extend the life of their existing Crandall Canyon Mine. The tract under consideration consists of 3,384 acres of National Forest System lands within the Manti-La Sal National Forest. The lease tract and location are described in the enclosed Biological Evaluation prepared by the Forest Service wildlife biologists. The mining scenario presented by Genwal Coal Company and confirmed by BLM calls for the tract to be accessed through existing underground workings. Mining would be conducted by underground methods only. No surface facilities would be necessary within the proposed tract.

Since the tract lies on National Forest System lands, the Manti-La Sal National Forest, the Forest Service and Bureau of Land Management are jointly preparing the environmental analysis. The Office of Surface Mining Reclamation and Enforcement is participating as a cooperating agency.

Unsuitability assessment procedures (Federal Regulations 43 CFR 3461.2) and Section 7 of the Endangered Species act require consultation with the U.S. Fish and Wildlife Service. Enclosed is a Biological Evaluation (BE) prepared by the Forest Service. The BE is provided in regard to consultation under Section 7 of the Endangered Species Act. The following narratives describe the Forest Service and BLM determination in regard to application of Unsuitability Criteria 9-15 (Federal Regulations 43 CFR 3461.5). Because the coal would be mined by underground mining methods, the underground mining exemption (43 CFR 3461.1(a)) would apply. This exemption states: "Federal lands with coal deposits that would be mined by underground mining methods shall not be assessed as unsuitable where there would be no surface coal mining operations, as defined in 3400.0-5 of this title, on a lease if issued." However, because of the potential for mining induced subsidence, we have applied the criteria.

Criterion No. 9. There is no Federally designated or proposed critical habitat for listed or proposed threatened or endangered plant and animal species within the lease area. Mining operations would not adversely affect threatened or endangered species of plants or animals or species proposed for listing.

Criterion No. 10. There is no State designated critical or essential habitat for threatened or endangered plant and animal species found within the lease area. Underground mining would not adversely affect such species.

Criterion No. 11. There are no bald or golden eagle nest sites within the lease tract but golden eagle nests have been identified within a 1/2 mile buffer zone of the tract boundaries. However, exception (2)(i) applies. The underground mining of coal would not adversely affect the golden eagles or their nests.

Criterion No. 12. There are no bald or golden eagle roosts and concentration areas within the tract used during migration and wintering.

Criterion No. 13. There are no known falcon cliff nesting sites within the tract area or within 1/2 mile of the tract.

Criterion No. 14. There are migratory bird species of high Federal interest found within the tract area. However, exception (2) applies. The underground mining of coal will not adversely affect the migratory bird habitat during periods when such habitat is used.

Criterion No. 15. There are lands within the tract which are fish and wildlife habitat for resident species of high interest to the State. However, the stipulated methods of coal mining will not have a significant long-term impact to the species being protected.

As required under 43 CFR 3461.2-2, we are requesting a written Biological Opinion and concurrence/advise in regard to the determinations made in the BE and application of Criteria 9 and 11-14 described in this letter within 30 days of receipt. The State of Utah will be consulted in regard to application of Criteria 10 and 15.

We plan to release an Environmental Assessment and identify the Forest Service preferred alternative by September 1, 1993. A 30-day review and comment period will be provided. Your comments will be made part of the record and will be considered in formulation of the final decision.

If you have any questions concerning the proposal, please contact Rod Player or Carter Reed at the Forest Supervisor's Office in Price, Utah.

Sincerely,

/s/ Aaron L. Howe

for
GEORGE A. MORRIS
Forest Supervisor

Enclosure

cc:
R.Player
S.Romero
C.Reed
D-3

United States Department of Agriculture | Forest Service | Pr_e Ranger District Manti-La Sal N.F.

Reply to: 2820/2670 Date: August 6, 1993

Subject: BA/E For Genwal Coal Company, Crandall Canyon Tract Coal Lease

To: Forest Supervisor

Enclosed is an approved copy of the Biological Assessment/Evaluation for the Genwal Coal Company, Crandall Canyon Tract Coal Lease Application.

If you have any questions regarding this please contact Steve Romero or myself.

/s/Walter Nowak
For
CHARLES J. JANKIEWICZ
Price District Ranger

Enclosure

J.Beacco:jb

BIOLOIGICAL ASSESSMENT/EVALUATION FOR THE GENWAL COAL COMPANY
CRANDALL CANYON TRACT COAL LEASE APPLICATION

PRICE RANGER DISTRICT
MANTI-LA SAL NATIONAL FOREST

Prepared by: Steve F. Romero 8/6/93
Steve Romero
Wildlife Biologist
Date

Approved by:

Rodney L. Player 8/6/93
Rodney L. Player
Forest Wildlife Biologist
Manti-La Sal National Forest
Date

Approved by:

Leland Matheson 8/5/93
Leland Matheson
Range Conservationist
Manti-La Sal National Forest
Date

BIOLOGICAL EVALUATION FOR THE GENWAL COAL COMPANY/CRANDALL CANYON TRACT
COAL LEASE APPLICATION UTU-68082, LBA NO. 9

I. INTRODUCTION

This biological evaluation is prepared in response to the proposed Crandall Canyon Coal Lease Tract, UTU-68082. The area for lease is located about .5 air miles west of Highway 31 and 25 air miles southwest of Price, Utah. It is located in Emery County and may include T15S, R6E, Sections 25, 26, 27, 34, and 35; T15S, R7E, Sections 30 & 31; T16S, R6E, Sections 1 & 3; T16S, R7E Section 6 (see attached map). For more information on the Lease by Application proposal see the Environmental Assessment.

The Endangered Species Act of 1973 (PL 93-205, as amended) requires federal agencies to insure that any activities they authorize, fund, or carry out, do not jeopardize the continued existence of any wildlife species federally listed as Threatened or Endangered (Section 7). This biological evaluation is an analysis of which Threatened or Endangered species may occur in the project area and whether any impacts on those species are anticipated. Although not required under the Endangered Species Act, it is Forest Service policy to analyze potential impacts to Proposed and Sensitive species as well (Forest Service Manual (FSM) 2670.31-32). Proposed Species are those that are proposed by the U.S. Fish and Wildlife Service to be listed as threatened or endangered. Sensitive Species are those identified by the Forest Service Regional Forester as "those...for which population viability is a concern, as evidenced by...significant current or predicted downward trends in population numbers or density..." or "significant current or predicted downward trends in habitat capability that would reduce a species' existing distribution." (FSM 2670.5).

This biological evaluation is prepared using direction from the Forest Service Manual 2672.4. Discussions with wildlife biologists from the US Fish and Wildlife Service, Utah Division of Wildlife Resources, Brigham Young University, and staff with the USDA Forest Service also provided information for this evaluation.

II. PROPOSED ACTION

Genwal Coal Company filed an application with the Bureau of Land Management, Utah State Office to lease the Crandall Canyon Tract. The application was filed on March 4, 1991. The proposed lease area encompasses 3,384.03 acres of Federal coal lands (see map) and ranges in elevation from approximately 8,800 to 10,700 ft. No new surface facilities are expected to be constructed in relation to mining this lease unless a company other than Genwal were to acquire the tract and open another mine in Crandall Canyon. The surface of the subject lands are entirely managed by the Manti-LaSal National Forest.

III. SPECIES KNOWN or POTENTIALLY IN THE AREA

Known or Suspected Threatened, Endangered, Proposed, and Sensitive Species in the Area of Influence of this Action:

SPECIES	CLASSIFICATION
1. Bald eagle (Haliaeetus leucocephalus)	Endangered
2. Northern goshawk (Accipiter gentilis)	Proposed
3. Flammulated owl (Otus flammeolus)	Sensitive
4. Three-toed woodpecker (Picoides tridactylus)	Sensitive
5. Townsend's big-eared bat (Plecotus townsendii)	Sensitive
6. Carrington daisy (Erigeron carringtonae)	Sensitive
7. Helenium hymenoxys (Hymenoxys helenioides)	Sensitive

Notes:

The above species list was derived from a U.S. Fish and Wildlife Service (USFWS) list of Threatened, Endangered, and Proposed species that may be present in the general Wasatch Plateau area, and from the Forest Service (FS) Sensitive Species list for the Intermountain Region. Those species on the USFWS and FS lists that are not included with the species above were determined to be unlikely residents of the proposed project area due to different habitat requirements.

IV. SPECIES OCCURRENCES AND HABITAT NEEDS

BALD EAGLE (Haliaeetus leucocephalus):

Habitat - During the breeding season bald eagles are closely associated with water, along coasts, lakeshores, or river banks. During the winter bald eagles tend to concentrate wherever food is available. This usually means open water where fish and waterfowl can be caught. They also winter on more upland areas feeding on small mammals and deer carrion. At winter areas, bald eagles commonly roost in large groups. These communal roosts are located in forested stands that provide protection from harsh weather [Stalmaster 1987].

Bald eagles can often be found near the lakes and reservoirs on the Manti Division during the late fall and early winter. When these water bodies freeze over the eagles leave.

NORTHERN GOSHAWK (Accipiter genitilis):

Habitat - In nesting or foraging, the goshawk is a raptor of the dense forest. Goshawks have been found in a variety of forest ecosystems including lodgepole pine, ponderosa pine, Douglas fir, and mixed forests throughout much of the Northern hemisphere. They prey upon small mammals and birds (rabbits, squirrels, chipmunks, grouse, woodpeckers, jays, robins, grosbeaks, and etc.). Goshawk nest sites are usually located in mature forests, near water, and on benches of relatively little slope. Nests are often used year after year. Goshawks are very protective of their young in the nest and loudly defend them to intruders. They are very sensitive to human disturbance and have abandoned

nests and young due to human activities that take place too close to their nest [Kennedy and Stahlecker 1989; and Hennessey 1978].

Goshawks have been found nesting on all Ranger Districts. These nests are associated with Aspen, mixed conifer, Douglas Fir, and Ponderosa Pine.

FLAMMULATED OWLS (Otus flammeolus):

Habitat - Flammulated owls are found throughout the western United States including Utah. They can be found in the mixed pine forests, from pine mixed with oak and pinyon at lower elevations to pine mixed with spruce and fir at higher elevations. They have also been found in aspen and second growth ponderosa pine. However, they prefer mature Ponderosa Pine-Douglas fir forests with open canopies. Large diameter dead trees with cavities are important nest site characteristics. They avoid foraging in young dense stands where hunting is difficult. Flammulated owls are dependent upon mature conifer stands for nesting. They are also known to avoid cut-over areas. Flammulated owls are almost exclusively insectivorous, preying on small to medium sized moths, beetles, caterpillars, and crickets [Reynolds and Linkhart 1987; Jognsgard 1988; and Bull et al 1990].

Many Flammulated owls have been located on the Monticello and Moab Ranger Districts as part of the Mexican Spotted Owl inventories. They have also been found in the Quitchupah drainage of the Ferron Ranger District. All of these locations have been associated with Ponderosa Pine.

NORTHERN THREE-TOED WOODPECKER (Picoides tridactylus):

Habitat - Three-toed woodpeckers range across North America. They are found in northern coniferous and mixed forest types up to 9,000 feet elevation. Forests containing spruce, grand fir, ponderosa pine, tamarack, and lodgepole pine are used. Nests may be found in spruce, tamarack, pine, cedar, and aspen trees. Three-toed woodpeckers forage mainly in dead trees, although they will feed in live trees. About 75% of their diet is woodboring insect larvae, mostly beetles, but they also eat moth larva. They are major predators of the spruce bark beetle, especially during epidemics. They forage on a wide variety of tree species depending on location. In Colorado, they prefer to forage on old-growth and mature trees. Fire or insect killed trees are major food sources. Forest fires and areas of insect outbreaks may lead to local increases in woodpecker numbers after 3-5 years [Bull et al 1986; Scott et al 1980].

Surveys for three-toed woodpeckers have taken place on the Ferron, Sanpete, Price and Monticello Ranger Districts. Three-toed woodpeckers are known to occur on each district.

TOWNSEND'S BIG-EARED BAT (WESTERN BIG-EARED BAT) (Plecotus townsendii):

Habitat - Townsend's or Western Big-eared bat uses a variety of scrub and forested habitats, throughout western North America. These bats use juniper/pine forests, shrub/steppe grasslands, deciduous forests and mixed

coniferous forest from sea level to 10,000 foot elevation. They utilize colonial nurseries. Cool places such as caves, rock fissures, mines, and buildings are used for roosting and hibernation. Foraging of primarily moths is often done in open woodlands, along forest edges, and over water.

The Townsend's Big-eared bat occurs throughout western North America including Utah. During the winter they roost singly or in small clusters. They remain at these sites from October to February. Migration for these bats usually means a change in location in the same cave or to another nearby cave.

The Townsend's Big-eared Bat is very sensitive to human disturbance. It will readily abandon roosts when disturbed. Activities that will or may disturb caves or mines should be evaluated to determine potential impacts to this species. Where roosts are located, cave exploration should be limited [Kunz and Martin 1982; and Utah Division of Wildlife Resources 1980].

CARRINGTON DAISY (Erigeron carringtoniae):

Habitat - Habitat of Carrington daisy include meadows and escarpment margins on Flagstaff limestone. Elevation is 9,000 to 11,000 feet. Carrington daisy is a low forb, vegetative type and is similar in appearance to E. Simplex, but differs in its pulvinate caespitose habit and thick obtuse to rounded leaves. Small isolated populations have been found mostly on Flagstaff limestone outcrops: at the head of Cove Creek; top of East Mountain; South Rim of Heliotrope Mountain; and top of Ferron Mountain within wind blown ridge tops and snow drift sites. Carrington daisy is endemic to Emery and Sanpete counties, Utah [USDA Forest Service 1991a,b; and Manti-LaSal National Forest].

HELENIUM HYMENOXYS (INTERMOUNTAIN BITTERWEED) (Hymenoxys helenioides):

Habitat - Helenium hymenoxys is a very widely scattered plant. It occurs mostly as an individual plant or one to five plants in a small area. Habitat range from dry meadows to wet sites in Douglas Fir, Blue Spruce, and Snowberry vegetative type. The plant occurs at elevations from 7,500 to 9000 ft. Distribution of Helenium hymenoxys includes Emery, Sanpete, Carbon, and Sevier counties, Utah.

Plants have been found from Muddy Creek (Ferron Ranger District) to Nuck Woodward Canyon in Upper Huntington Canyon (Price Ranger District). [USDA Forest Service 1991a,b; and Manti-LaSal National Forest]

V. DETERMINATION OF EFFECTS INCLUDING CUMULATIVE EFFECTS

Environmental Baseline:

Past, present, and planned human activities that may affect the seven species identified include the following projects and events.

1. Proximity of Miller's Flat Road (Forest Rd. 014) & Forest Rd 017:

Miller's Flat Road is immediately adjacent to the proposed project area. This road is a gravelled access road between Joe's Valley Reservoir and Highway 31. Forest Road 017 is situated between Miller's Flat road and the proposed project site. It runs parallel to Miller's Flat road and is mainly used as an access road to Indian Creek campground.

2. Intensive Hunting Use:

The lands surrounding the proposed project area receive intensive use during the big-game hunting season. The big-game hunting season in this area begins approximately August 17 and ends approximately November 15, although most hunters are present during the month of October for the elk and deer general seasons. Miller's Flat road and Forest road 017 provide access to hundreds of hunters each fall. The woods are combed thoroughly by people in search of deer and elk. Some camping occurs in the area but it is mostly confined to areas adjacent to the roads where RV's can park.

3. Coal Exploration/Mining:

Coal exploration drilling took place approximately three to four years ago within the proposed lease and state land areas. Genwal Coal Company currently administers a mine adjacent to the eastern boundry of the proposed lease area.

4. Water Developments/Recreation Sites:

There is a developed water trough within 1/2 a mile of the interior boundry (western edge) of the proposed lease area. This development is used by livestock within the Crandall Canyon S&G. The Indian Creek Campground is approximately 3/4 of a mile southwest of the proposed lease area. Horse Canyon Recreation Trail (a east & west directional trail) is located about 1/2 a mile to the north of proposed lease area and East Mountain Recreation Trail (a north & south directional trail) is located within the western end of proposed lease area. Most recreationists remain around the campground and trail areas and do not generally spend time in the forested zones around the proposed lease area.

5. Wildlife and Fish Inventories:

A biological survey for Northern Goshawk and Three-toed Woodpecker took place in some potential habitat stands within the general area of the proposed lease area (see map). This survey was done to identify the presence or absence of these sensitive species on the Price/Ferron Ranger Districts. No activity or presence of such species occurred within these surveyed areas. Observations took place on July 1, 1993.

Effects of the Project Proposal:

Bald Eagle:

The area is used infrequently by bald eagles (there are no records of bald eagles foraging in the area at this time). No direct or indirect effects are expected.

Northern Goshawk:

Goshawks are almost always found nesting near water. In the proposed lease area, most water sources are located on the western edge. There is potential habitat within this area for goshawk to inhabit, however the area was surveyed and no birds were observed. If mining takes place beneath these water sources and subsidence occurs, an important component of goshawk habitat may be affected.

Flammulated Owl:

If the flammulated owl is present at the proposed lease area or surrounding forested areas, the proposed project should not affect it. No direct or indirect effects from the proposed project are anticipated.

Three-toed Woodpecker:

Surveys for the Three-toed woodpecker were conducted and no birds were observed. If the Three-toed-woodpecker is present at the lease site or surrounding areas, the proposed project should not affect it. No direct or indirect effects from the proposed project are anticipated.

Townsend's Big-eared Bat:

If the Townsend's Big-eared Bat is present at the lease site or surrounding areas, the proposed project should not affect it. No direct or indirect effects from the proposed project are anticipated.

Carrington Daisy:

Carrington Daisy primarily occurs on outcrops of Flagstaff limestone. If leased land areas are mined, subsidence, due to underground mining, may affect this habitat type.

Helenium Hymenoxys:

There are no known plants that exist within the proposed lease areas. Therefore, there is no concern for activities that may impact these plants within the area.

Cumulative Effects:

As discussed in the previous section (Effects of the Project Proposal), the lease areas should not affect habitat for any listed or sensitive species.

Because of some level of human activity in and close to the project area (forest roads, hunting pressure, recreation sites), many of the sensitive species may not use the adjacent timber stands.

VI. DETERMINATION OF MAY AFFECT OR NO EFFECT

Bald Eagle:

The Crandall Canyon Tract Coal Lease will have no effect on the bald eagle population for the following reasons:

1. Bald eagles use the project area infrequently (there are no records of bald eagles foraging in the project area).

2. Bald eagles that migrate through the area do most of their foraging and resting near reservoirs. No reservoirs are located within the concerned area.

Northern Goshawk:

The Crandall Canyon Tract Coal Lease may affect the goshawk population for the following reason:

1. If the area, as delineated, is leased and eventually mined, subsidence, due to underground activity, may reduce water sources adversely impacting goshawk needs. However, no birds were observed during survey.

Flammulated Owl:

The Crandall Canyon Tract Coal Lease will not contribute to loss of viability of Flammulated Owls for the following reasons:

1. The flammulated owl may not be present in the project area. There are no records of flammulated owls occurring on the Price Ranger District at this time.

2. The lease site does not include Ponderosa Pine which is the only habitat type flammulated owls have been found in on the Forest.

Three-toed Woodpecker:

The Crandall Canyon Tract Coal Lease will not contribute to loss of viability of Northern Three-toed Woodpecker for the following reasons:

1. The three-toed woodpecker may not be present in the project area. Areas within the lease site were inventoried and no birds were found.

2. A very small amount of trees will be impacted by the proposed project. Thus, the potential for impacts is greatly reduced.

Townsend's Big-eared Bat:

The Crandall Canyon Tract Coal Lease will have no effect on the Townsend's Big-eared Bat for the following reasons:

1. Townsend's big-eared bat may not be present in the area. There are no records of this bat occurring on the Price Ranger District at this time.

2. The activity within the lease area would not impact current or potential habitat.

Carrington Daisy:

The Crandall Canyon Tract Coal Lease will have no effect on Carrington Daisy for the following reasons:

1. Proposed lease areas have been surveyed by Forest Botanist Robert Thompson. No plants have been found within this area.

2. The nearest population has been found at the head of Mill Canyon, top of East Mountain within Flagstaff limestone outcrops.

Helenium hymenoxys:

This leased area will not contribute to loss of viability of Helenium hymenoxys for the following reasons:

1. After many years of general plant inventories in the area, no Helenium hymenoxys have been found.

2. The nearest known population of Helenium hymenoxys is located in Nuckwoodward Canyon, approximately 4 miles northeast of proposed lease area.

VII. MITIGATION

If damage occurs to potential goshawk habitat due to subsurface mining, establish territories where goshawks may occur.

The Lessees, at their expense, will be responsible to replace any surface water identified for protection, that may be lost or adversely affected by minining operations, with water from an alternate source in sufficient quantity and quality to maintain existing riparian habitat, fishery habitat, livestock and wildlife use, or other land uses (Forest Service Stipulation # 17. Special Stipulations. Federal Regulations 43 CFR 3400).

Do not offer alternative B of the Crandall Canyon Lease by Application Environmental Analysis where chief water sources occur.

VIII. DOCUMENTATION

References used to determine the presence (or absence) of Threatened, Endangered, Proposed, and Sensitive Species as well as species and habitat information include:

A. Forest Service References:

District wildlife observation records. USDA Forest Service, Price Ranger District, Price, Utah.

Personal communications with Forest Service personnel.

USDA Forest Service. 1991. Threatened, Endangered, and Sensitive Species of the Intermountain Region. USDA Forest Service, Intermountain Region, Ogden, UT.

USDA Forest Service. 1991. Management guidelines for the northern goshawk in the Southwestern Region as published in the Federal Register, Vol. 56, Oct. 15, 1991, pp 51672-51680; USDA Forest Service, Washington, DC.

USDA Forest Service. 1991. Utah Endangered, Threatened, and Sensitive Plant Field Guide. USDA, Forest Service, Intermountain region, Ogden Utah

B. State Wildlife Agency References:

Personal communications with Bill Bates, Southeastern Regional Nongame Manager, Utah Division of Wildlife Resources, Price, UT.

Personal communications with Dennis Shirley, Central Regional Nongame Manager, Utah Division of Wildlife Resources, Springville, UT.

Utah Division of Wildlife Resources. 1990. Fauna of Southeastern Utah and Life Requisites Regarding their Ecosystems. Publication No. 90-11.

C. US Fish and Wildlife Service References:

A phone call was made to the US Fish and Wildlife Service on April 3, 1992 to confirm the list of Threatened, Endangered, and Proposed Species that was already on hand.

D. Other References:

Personal communications with Dr. Clayton White, Raptor Biologist, Brigham Young University, Provo, UT.

Bull, E.L., A.L. Wright, and M.G. Henjum 1990. Nesting habitat of flammulated owls in Oregon. J.Raptor Res. 24 (3):52-55.

Bull, E.L., S.R. Peterson, and J.W. Thomas. 1986. Resource partitioning among woodpeckers in north-eastern Oregon. Res. Note PNW-444. LeGrande, OR: U.S. Dept. of Agriculture, Forest Service, Pacific Northwest Res. Sta. 19 pp.

Johnsgard, P.A. 1988. North American ols, biology and natural history. Smith Instit. Press, Washington and London. 295 pp.

Kennedy, P.L. and D.W. Stahlecker. 1989. Preliminary Northern Goshawk Inventory. Unpublished Protocol.

Kunz, T. H. and R.A. 1982. Plecotus towsnedii. Mammalian Species No. 175. 6 pp.

Reynolds, R. T. and B.D. Linkhart. 1987. The nesting biology of flammulated owls in Colorado. Pages 239-248.

Scott, V.E., J.E. Whelan, and P.L. Soboda. 1980. Cavity nesting birds and forest management. Pages 311-324 in R.M. DeGraf, tech. coord. Proc. of workshop on management of western forests and grasslands for nongame birds. U.S. For. Serv. Gen. Tech. Rep. INT-86. Intermountain For. and Range Exp. Sta., Ogden, UT.

Stalmaster, M.V. 1987. The bald eagle, Universe Books, New York. 227 pp.

Welsh, Stanley L., N.D. Atwood, S. Goodrich, and L. C. Higgins. 1987. A Utah Flora. Great Basin Naturalist Memoirs Number 9. pp. 894.

Appendix D - Role of Office of Surface Mining, Reclamation, and Enforcement in the Regulation of Coal Mining

Appendix D - Role of Office of Surface Mining Reclamation and Enforcement in the Regulation of Coal Mining

The Surface Mining Control and Reclamation Act of 1977 (SMCRA) gives the Office of Surface Mining Reclamation and Enforcement (OSM) primary responsibility to administer programs that regulate surface coal mining operations and the surface effects of underground coal mining operations. In January 1981, pursuant to Section 503 of SMCRA, the Utah Division of Oil, Gas, and Mining (DOGM) developed, and the Secretary of the Interior approved, a permanent program authorizing Utah DOGM to regulate surface coal mining operations and surface effects of underground mining on non-Federal lands within the State of Utah. In March 1987, pursuant to Section 523 (c) of SMCRA, Utah DOGM entered into a cooperative agreement with the Secretary of the Interior authorizing Utah DOGM to regulate surface coal mining operations and surface effects of underground mining on Federal lands within the State.

Pursuant to the cooperative agreement, Federal coal lease holders in Utah must submit permit application packages (PAP's) to OSM and Utah DOGM for proposed mining and reclamation operations on Federal lands in the State. Utah DOGM reviews the PAP to ensure that the permit application complies with the permitting requirements and that the coal mining operation will meet the performance standards of the approved permanent program. If it does comply, Utah DOGM issues the applicant a permit to conduct coal mining operations. OSM, the Bureau of Land Management (BLM), the Forest Service (FS), and other Federal agencies review the PAP to ensure that it complies with the terms of the coal lease, the Mineral Leasing Act of 1920, the National Environmental Policy Act of 1969, and other Federal laws and their attendant regulations. OSM recommends approval, approval with conditions, or disapproval of the mining plan to the Assistant Secretary--Land and Minerals Management. Before the mining plan can be approved, BLM and the surface-managing agency (in this case FS) must concur with this recommendation.

Utah DOGM enforces the performance standards and permit requirements during the mine's operation and has primary authority in environmental emergencies. OSM retains oversight responsibility for this enforcement. BLM and FS have authority in those emergency situations where Utah DOGM or OSM inspectors cannot act before significant environmental harm or damage occurs.

BLM LEASE DOCUMENT

015/032 #2

Form 3400-12
(April 1986)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

Serial Number

UTU-68082

COAL LEASE

PART I. LEASE RIGHTS GRANTED

This lease, entered into by and between the UNITED STATES OF AMERICA, hereinafter called lessor, through the Bureau of Land Management, and *(Name and Address)*

Nevada Electric Investment Company (50%)
2835 South Jones Blvd.
Las Vegas, NV 89102

Intermountain Power Agency (50%)
~~c/o Los Angeles Department of Water and Power, Room 1107~~
~~P. O. Box 111~~ 480 EAST 6400 So., SUITE 200, 3-2-94
~~Los Angeles, CA 90051~~ MURRAY, UTAH 84107

hereinafter called lessee, is effective *(date)* MAR 1 1994, for a period of 20 years and for so long thereafter as coal is produced in commercial quantities from the leased lands, subject to readjustment of lease terms at the end of the 20th lease year and each 10-year period thereafter.

Sec. 1. This lease is issued pursuant and subject to the terms and provisions of the:

☒ Mineral Lands Leasing Act of 1920, Act of February 25, 1920, as amended, 41 Stat. 437, 30 U.S.C. 181-287, hereinafter referred to as the Act;

☐ Mineral Leasing Act for Acquired Lands, Act of August 7, 1947, 61 Stat. 913, 30 U.S.C. 351-359;

and to the regulations and formal orders of the Secretary of the Interior which are now or hereafter in force, when not inconsistent with the express and specific provisions herein.

Sec. 2. Lessor, in consideration of any bonuses, rents, and royalties to be paid, and the conditions and covenants to be observed as herein set forth, hereby grants and leases to lessee the exclusive right and privilege to drill for, mine, extract, remove, or otherwise process and dispose of the coal deposits in, upon, or under the following described lands:

T. 15 S., R. 6 E., SLM, Utah
Sec. 25, S2;
Sec. 26, S2;
Sec. 35, all.
T. 15 S., R. 7 E., SLM, Utah
Sec. 30, lots 7-12, SE;
Sec. 31, lots 1-12, NE, N2SE, SWSE.
T. 16 S., R. 6 E., SLM, Utah
Sec. 1, lots 1-12, SW.
T. 16 S., R. 7 E., SLM, Utah
Sec. 6, lots 2-4, SWNE.

containing 2,979.49 acres, more or less, together with the right to construct such works, buildings, plants, structures, equipment and appliances and the right to use such on-lease rights-of-way which may be necessary and convenient in the exercise of the rights and privileges granted, subject to the conditions herein provided.

PART II. TERMS AND CONDITIONS

Sec. 1. (a) RENTAL RATE - Lessee shall pay lessor rental annually and in advance for each acre or fraction thereof during the continuance of the lease at the rate of $3.00 for each lease year.

(b) RENTAL CREDITS - Rental shall not be credited against either production or advance royalties for any year.

Sec. 2. (a) PRODUCTION ROYALTIES - The royalty shall be 12½ & 8 percent of the value of the coal as set forth in the regulations. Royalties are due to lessor the final day of the month succeeding the calendar month in which the royalty obligation accrues.

(b) ADVANCE ROYALTIES - Upon request by the lessee, the authorized officer may accept, for a total of not more than 10 years, the payment of advance royalties in lieu of continued operation, consistent with the regulations. The advance royalty shall be based on a percent of the value of a minimum number of tons determined in the manner established by the advance royalty regulations in effect at the time the lessee requests approval to pay advance royalties in lieu of continued operation.

Sec. 3. BONDS - Lessee shall maintain in the proper office a lease bond in the amount of $3,057,000.00 The authorized officer may require an increase in this amount when additional coverage is determined appropriate.

Sec. 4. DILIGENCE - This lease is subject to the conditions of diligent development and continued operation, except that these conditions are excused when operations under the lease are interrupted by strikes, the elements, or casualties not attributable to the lessee. The lessor, in the public interest, may suspend the condition of continued operation upon payment of advance royalties in accordance with the regulations in existence at the time of the suspension. Lessee's failure to produce coal in commercial quantities at the end of 10 years shall terminate the lease. Lessee shall submit an operation and reclamation plan pursuant to Section 7 of the Act not later than 3 years after lease issuance.

The lessor reserves the power to assent to or order the suspension of the terms and conditions of this lease in accordance with, inter alia, Section 39 of the Mineral Leasing Act, 30 U.S.C. 209.

Sec. 5. LOGICAL MINING UNIT (LMU) - Either upon approval by the lessor of the lessee's application or at the direction of the lessor, this lease shall become an LMU or part of an LMU, subject to the provisions set forth in the regulations.

The stipulations established in an LMU approval in effect at the time of LMU approval will supersede the relevant inconsistent terms of this lease so long as the lease remains committed to the LMU. If the LMU of which this lease is a part is dissolved, the lease shall then be subject to the lease terms which would have been applied if the lease had not been included in an LMU.

Sec. 15. SPECIAL STIPULATIONS (Cont'd.) -

SEE ATTACHED STIPULATIONS

UTAH STATE OFFICE
RECEIVED
ACCOUNTS UNIT
94 FEB 25 AM 10:43
DEPT OF INTERIOR
BUR OF LAND MGMT

Nevada Electric Investment Company
Company or Lessee Name

Richard C. Hinckley
(Signature of Lessee)

Vice-President
(Title)

FEB 23 1994
(Date)

THE UNITED STATES OF AMERICA

Intermountain Power Agency
Company or Lessee Name

By Bureau of Land Management

Reed J. Searle
(Signature of Lessee)

Linda K. Sorenson
(Signing Officer)

General Manager
(Title)

ACTING Chief, Minerals Adjudication Section
(Title)

February 4, 1994
(Date)

March 2, 1994
(Date)

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

This form does not constitute an information collection as defined by 44 U.S.C. 3502 and therefore does not require OMB approval.

1. The Regulatory Authority shall mean the State Regulatory Authority pursuant to a cooperative agreement approved under 30 CFR Part 745 or in the absence of a cooperative agreement, Office of Surface Mining. The authorized officer shall mean the State Director, Bureau of Land Management. The authorized officer of the Surface Management Agency shall mean the Forest Supervisor, Forest Service. Surface Management Agency for private surface is the Bureau of Land Management. For adjoining private lands with Federal minerals and which primarily involve National Forest Service issues, the Forest Service will have the lead for environmental analysis and, when necessary, documentation in an environmental assessment or environmental impact statement.

2. The authorized officers, of the Bureau of Land Management, Office of Surface Mining (Regulatory Authority), and the Surface Management Agency (Forest Service) respectively, shall coordinate, as practical, regulation of mining operations and associated activities on the lease area.

3. In accordance with Sec. 523(b) of the "Surface Mining Control and Reclamation Act of 1977," surface mining and reclamation operations conducted on this lease are to conform with the requirements of this Act and are subject to compliance with Office of Surface Mining Regulations, or as applicable, a Utah program equivalent approved under cooperative agreement in accordance with Sec. 523(c). The United States Government does not warrant that the entire tract will be susceptible to mining.

4. Federal Regulations 43 CFR 3400 pertaining to Coal Management make provisions for the Surface Management Agency, the surface of which is under the jurisdiction of any Federal agency other than the Department of Interior, to consent to leasing and to prescribe conditions to insure the use and protection of the lands. All or part of this lease contain lands the surface of which are managed by the United States Department of Agriculture, Forest Service Manti-LaSal National Forest.

The following stipulations pertain to the lessee responsibility for mining operations on the lease area and on adjacent areas as may be specifically designated on National Forest System lands.

5. Before undertaking activities that may disturb the surface of previously undisturbed leased lands, the lessee may be required to conduct a cultural resource inventory and a paleontological appraisal of the areas to be disturbed. These studies shall be conducted by qualified professional cultural resource specialists or qualified paleontologists, as appropriate, and a report prepared itemizing the findings. A plan will then be submitted making recommendations for the protection of, or measures to be taken to mitigate impacts for identified cultural or paleontological resources.

If cultural resources or paleontological remains (fossils) of significant scientific interest are discovered during operations under this lease, the lessee prior to disturbance shall, immediately bring them to the attention of the appropriate authorities. Paleontological remains of significant scientific interest do not include leaves, ferns, or dinosaur tracks commonly encountered during underground mining operations.

The cost of conducting the inventory, preparing reports, and carrying out mitigating measures shall be borne by the lessee.

6. If there is reason to believe that threatened or endangered (T&E) species of plants or animals, or migratory bird species of high Federal interest occur in the area the lessee shall be required to conduct an intensive field inventory of the area to be disturbed and/or impacted. The inventory shall be conducted by a qualified specialist and a report of findings will be prepared. A plan will be prepared making recommendations for the protection of these species or action necessary to mitigate the disturbance.

The cost of conducting the inventory, preparing reports, and carrying out mitigating measures shall be borne by the lessee.

7. The lessee shall be required to perform a study to secure adequate baseline data to quantify the existing surface resources on and adjacent to the lease area. Existing data may be used if such data is adequate for the intended purposes. The study shall be adequate to locate, quantify, and demonstrate the inter-relationship of the geology, topography, surface hydrology, vegetation, and wildlife. Baseline data will be established so that future programs of observation can be incorporated at regular intervals for comparison.

8. Powerlines used in conjunction with the mining of coal from this lease shall be constructed so as to provide adequate protection for raptors and other large birds. When feasible, powerlines will be located at least 100 yards from public roads.

9. The limited area available for mine facilities at the coal outcrop, steep topography, adverse winter weather, and physical limitations on the size and design of the access road, are factors which will determine the ultimate size of the surface area utilized for the mine. A site specific environmental analysis will be prepared for each new mine site development and for major modifications to existing developments to examine alternatives and mitigate conflicts.

10. Consideration will be given to site selection to reduce adverse visual impacts. Where alternative sites are available, and each alternative is technically feasible, the alternative involving the least damage to the scenery and other resources shall be selected. Permanent structures and facilities will be designed, and screening techniques employed, to reduce visual impacts, and where possible achieve a final landscape compatible with the natural surroundings. The creation of unusual, objectionable, or unnatural land forms and vegetative landscape features will be avoided.

11. The lessee shall be required to establish a monitoring system to locate, measure, and quantify the progressive and final effects of underground mining activities on the topographic surface, underground and surface hydrology and vegetation. The monitoring system shall utilize techniques which will provide a continuing record of change over time and an analytical method for location and measurement of a number of points over the lease area. The monitoring shall incorporate and be an extension of the baseline data.

12. The lessee shall provide for the suppression and control of fugitive dust on haul roads and at coal handling and storage facilities. On Forest Development Roads (FDR), lessees may perform their share of road maintenance by a commensurate share agreement if a significant degree of traffic is generated that is not related to their activities.

13. Except at specifically approved locations, underground mining operations shall be conducted in such a manner so as to prevent surface subsidence that would: (1) cause the creation of hazardous conditions such as potential escarpment failure and landslides, (2) cause damage to existing surface structures, or (3) damage or alter the flow of perennial streams. The lessee shall provide specific measures for the protection of escarpments, and determine corrective measures to assure that hazardous conditions are not created.

14. In order to avoid surface disturbance on steep canyon slopes and to preclude the need for surface access, all surface breakouts for ventilation tunnels shall be constructed from inside the mine, except at specifically approved locations.

15. If removal of timber is required for clearing of construction sites, etc., such timber shall be removed in accordance with the regulations of the surface management agency.

16. The coal contained within, and authorized for mining under this lease, shall be extracted only by underground mining methods.

17. Existing Forest Service owned or permitted surface improvements will need to be protected, restored, or replaced to provide for the continuance of current land uses.

18. In order to protect big game wintering areas, elk calving and deer fawning areas, sagegrouse strutting areas, and other critical wildlife habitat and/or activities, specific surface uses outside the mine development area may be curtailed during specific periods of the year.

19. Support facilities, structures, equipment, and similar developments will be removed from the lease area within 2 years after the final termination of use of such facilities. This provision shall apply unless the requirement of Section 10 of the lease form is applicable. Disturbed areas and those areas previously occupied by such facilities will be stabilized and rehabilitated, drainages reestablished, and the areas returned to a premining land use.

20. The lessee at the conclusion of the mining operations, or at other times as surface disturbance related to mining may occur, will replace all damaged, disturbed, or displaced corner monuments (section corners, quarter corners, etc.) their accessories and appendages (witness trees, bearing trees, etc.), or restore them to their original condition and location, or at other locations that meet the requirements of the rectangular surveying system. This work shall be conducted at the expense of the lessee, by a professional land surveyor registered in the State of Utah and to the standards and guidelines found in the manual of surveying instruction, U.S. Department of Interior.

21. The lessee at his expense will be responsible to replace any surface water identified for protection, that may be lost or adversely affected by mining operations, with water from an alternate source in sufficient quantity and quality to maintain existing riparian habitat, fishery habitat, livestock and wildlife use, or other land uses.

22. The lessee must comply with all the rules and regulations of the Secretary of Agriculture set forth at Title 36, Chapter II, of the Code of Federal Regulations governing the use and management of the National Forest System (NFS) when not inconsistent with the rights granted by the Secretary of the Interior in the lease. The Secretary of Agriculture's rules and regulations must be complied with for (1) all use and occupancy of the NFS prior to approval of a permit/operation plan by the Secretary of Interior, (2) uses of all existing improvements, such as Forest Development Roads, within and outside the area licensed, permitted or leased by the Secretary of Interior, and (3) use and occupancy of the NFS not authorized by a permit/operation plan approved by the Secretary of the Interior.

All matters related to this stipulation are to be addressed to:

Forest Supervisor
Manti-LaSal National Forest
599 West Price River Drive
Price, Utah 84501
Telephone No.: 801-637-2817

who is the authorized representative of the Secretary of Agriculture.

23. The lessee/operator will be required to drill horizontally ahead of the advance of development workings to the west in the vicinity of the Joes Valley Fault zone to locate any faults and determine if they contain significant amounts of water. If significant water is encountered, the operator will be required to take appropriate measures, subject to approval of the Bureau of Land Management and Forest Service, to prevent diverting this water into the mine workings.

24. Except at specifically approved locations, mining that would cause subsidence will not be permitted within a zone along the Joes Valley Fault determined by projecting a 22 degree angle-of-draw (from vertical) eastward from the surface expression of the Joes Valley Fault, down to the top of the coal seam to be mined.

LETTERS OF CONCURRENCE

State of Utah
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

Michael O. Leavitt
Governor
Ted Stewart
Executive Director
James W. Carter
Division Director

355 West North Temple
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203
801-538-5340
801-359-3940 (Fax)
801-538-5319 (TDD)

May 23, 1994

Mr. R. Jay Marshall
Genwal Coal Company
P. O. Box 1201
Huntington, Utah 84528

Re: Determination of Administrative Completeness, LBA Lease Addition, Genwal Coal Company, Crandall Canyon Mine, ACT/015/032-93-1, Folder #3, Emery County, Utah

Dear Mr. Marshall:

The Division has conducted an Initial Completeness Review on the information received through May 9, 1994 for your application to add Federal lease UTU-68082 to your permit area. The information has been found to be adequate to determine the Permit Application Package (PAP) complete for publication purposes.

A technical analysis of the plan will now be initiated. The Division will coordinate with other agencies and incorporate their comments into our review process. Issues raised will need to be resolved prior to permit issuance.

At this time you should publish a Notice of Application for a Mine Permit as required by R645-300-121. A copy of the publication notice should be sent to the Division as soon as it is available. You should also insure that copy of the complete application is on file at the Carbon County courthouse. The Division will notify all other interested agencies and allow for their comment prior to making a final decision to approve or disapprove the application.

Please call if you have any questions.

Sincerely,

Daron R. Haddock

Daron R. Haddock
Permit Supervisor

cc: L. Braxton

State of Utah
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

Michael O. Leavitt
Governor
Ted Stewart
Executive Director
James W. Carter
Division Director

355 West North Temple
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203
801-538-5340
801-359-3940 (Fax)
801-538-5319 (TDD)

May 25, 1994

Mr. Thomas E. Ehmett, Acting Director
Office of Surface Mining
Reclamation and Enforcement
505 Marquette N.W., Suite 1200
Albuquerque, NM 87102

Re: Determination of Administrative Completeness, Genwal Coal Company, LBA Lease Addition, Crandall Canyon Mine, ACT/015/032-93-1, Folder #2, Emery County, Utah

Dear Mr. Ehmett:

Genwal Coal Company is proposing to expand its current underground coal mining operation in Emery County. The expansion involves adding Federal Lease UTU-68082, known as the LBA Lease, to the existing Crandall Canyon Permit area. The lease will be mined as an underground extension of the existing, approved and currently operating Crandall Canyon Mine. As such, no additional surface facilities are required nor are there any additional surface disturbances planned.

The Utah Division of Oil, Gas and Mining (Division) has completed a review of the Permit Application Package (PAP) for the LBA lease addition. The Division has determined the plan to be administratively complete. In compliance with Utah Coal Mining Rules R645-300-121.300, R645-300-121.310, R645-300-121.320 and the Utah Coal Mining Act (UMC Section 40-10-1 et. seq.), notice is hereby given to all appropriate agencies having a jurisdiction over or an interest in the area of the operations that a complete plan is available for public review.

The permit area is located in Emery County, Utah in the Wasatch Coal Field approximately 10 miles northwest of the town of Huntington, Utah.

The following areas comprise the proposed permit area:

Township 15 South, Range 6 East, SLBM

Section 25:	S1/2
Section 26:	S1/2
Section 35:	all

Township 15 South, Range 7 East, SLBM
Section 30: lots 7-12, SE1/4
Section 31: lots 1-12, NE1/4, N1/2SE1/4, SW1/4SE1/4

Township 16 South, Range 6 East, SLBM
Section 1: lots 1-12, SW1/4

Township 16 South, Range 7 East, SLBM
Section 6: lots 2-4, SW1/4NE1/4

The Division of Oil, Gas and Mining will now undertake a technical review to determine whether the plan meets all the criteria of the Permanent Program Performance Standards according to the requirements of UCA, Section 40-10-1 et. seq. and Utah Admin. R. 645-100 et. seq.

Upon completion of the technical review of the plan, a decision will be made as to approval or disapproval of the permit application. This plan is available for public review at: Division of Oil Gas and Mining, 355 West North Temple, 3 Triad Center, Suite 350, Salt Lake City, Utah 84180-1203.

Comments of the PAP may be addressed to:

James W. Carter, Director
Division of Oil, Gas and Mining
355 West North Temple, Suite 350
Salt Lake City, Utah 84180-1203

For further information, please contact Daron R. Haddock, Permit Supervisor at the above address or phone 538-5340.

Sincerely,

Lowell P. Braxton
Associate Director, Mining

/sm

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Moab District
P. O. Box 970
Moab, Utah 84532

TAKE PRIDE IN AMERICA

IN REPLY REFER TO:
3482
UTU-68082
(UT-065)

SEP 19

SEP 16 1994

Ms. Pamela Grubaugh-Littig
Permit Supervisor
Utah Division of Oil, Gas and Mining
355 West North Temple Street
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203

Re: Federal Lease UTU-68082 Addition, Crandall Canyon Mine, Genwal Coal Company, ACT/015/032-93-1 #3

Copy FAX

Dear Ms. Grubaugh-Littig:

We have reviewed the subject mine plan submitted on May 16, 1994. We notified the operator of deficiencies in the R2P2 on August 24, 1994. The company responded on September 6, 1994. Our recommendations of the resource recovery protection plan (R2P2) are based on these submittals.

The subject plan calls for adding Federal coal lease UTU-68082 to the mine permit area. The R2P2 portion of the plan details the mining layout for the tract. The plan calls for extending the underground mine workings from the adjacent state coal lands, continuing to develop room-and-pillar panels, and full pillar extraction upon retreat mining. No additional impacts are anticipated as all access to the new tract will be from existing mine workings with no new surface facilities. Possible subsidence impacts from underground mining have been addressed in the submittal. Our technical review finds that the proposed mining plan will meet all requirements of the law and lease terms and conditions, including the protection of perennial streams.

We have determined that the R2P2 is in compliance with the Mineral Leasing Act of 1920, as amended, the regulations at 43 CFR 3480, Federal lease terms and conditions, and will achieve maximum economic recovery. We therefore recommend approval of the mining plan for Federal lease UTU-68082 and that the lease be included into the Crandall Canyon Mine permit.

If you have any comments or questions, please contact Stephen Falk at the Price River Resource Area Office at 637-4584.

Sincerely,

Acting

District Manager

cc: UT-066, AM, Price
UT-921, SD, Utah
Office of Surface Mining
Western Support Center
1999 Broadway, Suite 3320
Denver, CO 80202-5733
Genwal Coal Company
P. O. Box 1201
Huntington, Utah 84528
Manti-LaSal National Forest
599 Price River Drive
Price, Utah 84501

Form DOGM - D1 (Last Revised 6/93)

file #3

File Folder #3

PERMIT AMENDMENT APPROVAL

Title: Shotcreting the highwall	PERMIT NUMBER: ~~9~~ 015/032
Description:	PERMIT CHANGE #: 940
	MINE: Crandall Cyn
	PERMITTEE: Genwall

WRITTEN FINDINGS FOR PERMIT APPLICATION APPROVAL		YES, NO or N/A
1.	The application is complete and accurate and the applicant has complied with all the requirements of the State Program.	Yes
2.	The proposed permit area is not within an area under study or administrative proceedings under a petition, filed pursuant to R645-103-400 or 30 CFR 769, to have an area designated as unsuitable for coal mining and reclamation operations, unless:	Yes
	A. The applicant has demonstrated that before January 4, 1977, substantial legal and financial commitments were made in relation to the operation covered by the permit application, or	
	B. The applicant has demonstrated that the proposed permit area is not within an area designated as unsuitable for mining pursuant to R645-103-300 and R645-103-400 or 30 CFR 769 or subject to the prohibitions or limitations of R645-103-230.	
3.	For coal mining and reclamation operations where the private mineral estate to be mined has been severed from the private surface estate, the applicant has submitted to the Division the documentation required under R645-301-114.200.	NA
4.	The Division has made an assessment of the probable cumulative impacts of all anticipated coal mining and reclamation operations on the hydrologic balance in the cumulative impact area and has determined that the proposed operation has been designed to prevent material damage to the hydrologic balance outside the permit area.	Yes
5.	The operation would not affect the continued existence of endangered or threatened species or result in destruction or adverse modification of their critical habitats, as determined under the Endangered Species Act of 1973 (16 U.S.C. 1531 et.seq.).	Yes
6.	The Division has taken into account the effect of the proposed permitting action on properties listed on and eligible for listing on the National Register of Historic Places. This finding may be supported in part by inclusion of appropriate permit conditions or changes in the operation plan protecting historic resources, or a documented decision that the Division has determined that no additional protection measures are necessary.	Yes
7.	The Applicant has demonstrated that reclamation as required by the State Program can be accomplished according to information given in the permit application.	Yes
8.	The Applicant has demonstrated that any existing structure will comply with the applicable performance standards of R645-301 and R645-302.	Yes
9.	The Applicant has paid all reclamation fees from previous and existing coal mining and reclamation operations as required by 30 CFR Part 870.	Yes
10.	The Applicant has satisfied the applicable requirements of R645-302.	NA
11.	The Applicant has, if applicable, satisfied the requirements for approval of a long-term, intensive agricultural postmining land use, in accordance with the requirements of R645-301-353.400.	NA

SPECIAL CONDITIONS OR STIPULATIONS TO THE PERMIT AMENDMENT APPROVAL		YES	NO
1.	Are there any variances associated with this permit amendment approval? If yes, attach.		X
2.	Are there any special conditions associated with this permit amendment approval? If yes, attach.		X
3.	Are there any stipulations associated with this permit amendment approval? If yes, attach.		X

The Division hereby grants approval for Permit Amendment to the Existing Permit by incorporation of the proposed changes described herein and effective the date signed below. All other terms and conditions of the Existing Permit shall be maintained and in effect except as superseded by this Permit Amendment.

Signed Dana R Haddock
[redacted], Division of Oil, Gas and Mining

6/23/94
EFFECTIVE DATE

State of Utah
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

Michael O. Leavitt
Governor

Ted Stewart
Executive Director

James W. Carter
Division Director

355 West North Temple
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203
801-538-5340
801-359-3940 (Fax)
801-538-5319 (TDD)

October 11, 1994

Melissa Mangus
Alexander and Alexander
1660 West Second Street
650 Skylight Office Tower
Cleveland, Ohio 44113

Re: Effective Dates of Bonds, Permit Transfer from Valley Camp of Utah, Inc. to White Oak Mining and Construction, White Oak Mine #1 and #2, ACT/007/001, Folder #5, Carbon County, Utah

Dear Ms. Mangus:

Pursuant to your question of the effective date of the bonds for White Oak Mine #1 and #2 (previously named Belina Mines Complex), the permit transfer for this mine from Valley Camp of Utah, Inc. to White Oak Mining and Construction, Inc., was May 27, 1994. On May 27, 1994, the reclamation bond for White Oak Mining and Construction, Inc., became effective, i.e. Nation Union Fire Insurance Company Surety Bond 13-60-93, in the amount of $5,891,000.

If you have any questions, please call me or Pamela Grubaugh-Littig.

Yours very truly,

James W. Carter
Director

cc: Steve Tanner, White Oak Mining and Construction, Inc.
Pamela Grubaugh-Littig

United States Department of the Interior

FISH AND WILDLIFE SERVICE

UTAH FIELD OFFICE
LINCOLN PLAZA
145 EAST 1300 SOUTH, SUITE 404
SALT LAKE CITY, UTAH 84115

In Reply Refer To
(ES)

July 6, 1994

Pamela Grubaugh-Littig
Division of Oil, Gas, and Mining
Utah Department of Natural Resources
3 Triad Center, Suite 350
355 West North Temple
Salt Lake City, Utah 84180-1203

Re: **Federal Lease #6802 (LBA #9), Genwal Coal Company, Genwal Mine, ACT/015/032-93-1, Folder #2, Emery County, Utah**

ACT/015/032 #3
Copy sent

Dear Ms. Grubaugh-Littig:

This is in response to your letter of May 12, 1994 and discussions with Daron R. Haddock on June 30, 1994 concerning the above lease. This Federal lease application is an extension of the current underground operation at the Genwal Mine with no surface disturbances proposed. The Fish and Wildlife Service has reviewed the material provided and believes no significant impacts to wildlife resources would be expected. This is based on the following facts:

1) a raptor survey was conducted in 1993 and no raptor nests would be impacted by the project;

2) subsidence should be minimal due to room and pillar mining; and

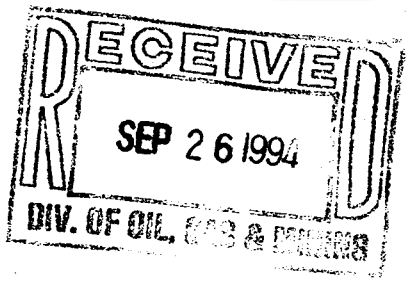
3) no threatened, endangered or sensitive plant or animal species are known to inhabit the area.

We appreciate the opportunity to comment on this project.

Sincerely,

for Robert D. Williams
Assistant Field Supervisor

United States Department of Agriculture | Forest Service | Manti-La Sal National Forest | 599 West Price River Dr. Price, Utah 84501 (801) 637-2817



Reply to: 2820-4

Date: September 22, 1994

Utah Division of Oil, Gas and Mining
ATTN: Pam Grubaugh-Littig, Permit Supervisor
355 West North Temple
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203

ACT/015/032 #3

Dear Pam,

The new Genwal Coal Company Mining and Reclamation Plan (MRP), which has been modified to include the recently-acquired lease tract, has been reviewed. We have worked with Genwal directly to correct numerous deficiencies, but a number of minor deficiencies still exist. These remaining defeciencies are not considered serious enough to delay the permitting process, but should be corrected within the next 45 days.

I consent to the MRP conditional on the deficienceies noted on the enclosure being corrected to the satisfaction of the Forest Service by not later than November 1, 1994.

If you have any questions please contact us at (801) 637-2817.

Sincerely,

for Ann L Home

GEORGE A. MORRIS
Forest Supervisor

Enclosure

REQUIRED CORRECTIONS FOR THE GENWAL COAL COMPANY
CRANDALL CANYON NO. 1 MINING AND RECLAMATION PLAN

Page 3-6, Reptiles and Amphibians.

There is a discussion of amphibians, but no mention of reptiles.

Pages 3-6 through 3-8, Migratory Birds of High Federal Interest

The first paragraph starts with a discussion of the 22 species on the FWS list, then jumps into grassland hunting habitat, presumably for some type of raptor. Something is missing, and the paragraph does not make sense. Also, how current is the list of 22 species?

Number 11 on the list is the "Flammulated Owl", not "Plammulated Owl".

There is a discussion of a few of the birds on the list, but not all. Why were some omitted.

There is no mention of the Forest Service, Region 4, list of especially significant species occurring in the area.

In the paragraph immediately below the list of the 22 species (page 3-7), it states 5 of the species were "previously discussed in this report". We can not find where they were discussed.

The second paragraph below the species list does not make sense. It goes from a discussion of reporting the presence of T&E species into a discussion of golden eagle nest sites.

Page 3-9, section 3.22.230.

Spotted bats, Townsend's big-eared bats, and spotted frogs are known to occur on the Wasatch Plateau, but are not mentioned.

Page 3-14, section 3.33, Impacts to Fish and Wildlife.

There is a discussion of surveying for impacts to raptors, but no mention of identifying impacts to other the other wildlife or fish occupying the area.

Page 3-16, third paragraph.

The baseline data are useless unless there is a periodic check to determine deviations from baseline conditions. The company should commit to an aquatic macroinvertebrate study every 3 years to show that there have been no impacts to the aquatic environment.

Page 3-16, fourth paragraph.

Guzzlers may not provide satisfactory mitigation. Genwal must commit to complying with the lease stipulation which requires replacement of water in quality and quantity.

Page 3-17, Wildlife.

Raptor #4 should be "Swainson's hawk", not "Swenson hawk". Coopers hawk should be added to the list. It is unlikely that the Ferrugenous hawk would occur in the area.

If there are possible impacts to raptors, the company should contact the Forest Service in addition to UDWR.

Page 3-18, first paragraph.

The Forest Service will not consent to the sediment pond being left in place after the mine area is reclaimed. It must be removed as agreed to in the original mine plan.

Page 3-33, fourth paragraph.

As on page 3-16, a periodic survey of macroinvertebrates is necessary to compare with baseline data to detect changes in the aquatic environment.

Page 4-3, fifth paragraph.

The last word, "leases", should be replaced with "lease stipulations". The USFS consents, with stipulations, to the issuance of leases by the BLM. The USFS does not issue leases.

Page 4-5, first full paragraph.

There should be mention of the archaeological survey done for the new lease tract.

Page 5-8, item 5 under section 5.22 Coal Recovery.

The last four words, "approved by the Division.", should be replaced with "with the consent of the Forest Service and the approval of the Division."

Page 5-17, Section 5.25

The potential for subsidence under perennial streams must be discussed, and calculations shown for roof support between pillars where there is less than 400 feet of overburden.

Page 5-18, first full paragraph.

There is no mention of potential subsidence along the western edge of the new lease, in the area of the Joes Valley Fault. This area should be discussed thoroughly.

Page 5-27, third paragraph.

Guzzlers may not provide acceptable mitigation. Genwal must commit to replacing water in quality and quantity, as required by the lease stipulation.

Page 5-27, last paragraph.

We do not object to Genwal paying livestock permittees for lost forage, but Genwal must also replace the water in quality and quantity, as required by the lease stipulation.

Page 5-46, section 5.42.5 Timetable and Plans, Removal of Sedimentation Pond, second paragraph.

The Forest Service will not consent to leaving the pond after the mine is reclaimed. This is an unapproved change from the last mine plan.

Page 7-22, last paragraph.

Should mention that all of the water from springs or seeps on the lease ultimately flows into the Huntington or Cottonwood drainages, where they are 100% allocated.

Page 7-23, third paragraph.

If water discharge into Crandall Creek is required, a point source discharge permit would be required. If Genwal does not already have this permits, none are available according to the anti-degredation requirements of the State of Utah. If they have a permit, any discharge must comply with the requirements of the permit.

Page 7-46, last full paragraph.

Copies of the data and analysis must also be sent to the Forest Service.

Appendix 3-1. Vegetation Reference Area and Species List.

This does not appear to have been updated since 1988. Is it valid for the new lease area?

Appendix 3-2. Aquatic Resources of Crandall Canyon.

The macroinvertebrate survey data for 1981 and 1982 are missing.

Appendix 7-30. Manti-La Sal National Forest Vegetation Data.

The map needs a legend or description. It is impossible to determine vegetation type from the map as it is.

Appendix 7-31. Percent Ground and Crown Cover Calculations.

There is no description of the land type or vegetation type. The data in the table are useless as presented and must be revised.

State of Utah

Department of Community & Economic Development
Division of State History
Utah State Historical Society

Michael O. Leavitt
Governor
Max J. Evans
Director

300 Rio Grande
Salt Lake City, Utah 84101-1182
(801) 533-3500
FAX: (801) 533-3503

May 26, 1994

Pamela Grubaugh-Littig
Permit Supervisor
Division of Oil, Gas and Mining
355 West North Temple
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203

RE: Federal Lease #68082 (LBA #9), Genwal Coal Company, Genwal Mine, ACT/015/032-93-1, Folder #2, Emery County, Utah

In Reply Please Refer to Case No. 90-0320 ACT/015/032 #3

Copy Dana

Dear Ms. Grubaugh-Littig:

The Utah State Historic Preservation Office received the above referenced project on May 23, 1994. Since the plan calls for no new surface disturbance, the Utah Preservation Office recommends a determination of No Historic Properties.

One critical item as we have discussed. The AERC survey report is a complete report which shows all site locations. There should be a version of report that contains all material except exact site location. The report needs to be pulled from all copies of the Mine Plan.

This information is provided on request to assist the Division of Oil, Gas and Mining with its Section 106 responsibilities as specified in 36CFR800. If you have questions, please contact me at (801) 533-3555.

Sincerely,

James L. Dykmann
Compliance Archaeologist

JLD:90-0320

State of Utah
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

Michael O. Leavitt
Governor

Ted Stewart
Executive Director

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Division Director

355 West North Temple
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203
801-538-5340
801-359-3940 (Fax)
801-538-5319 (TDD)

September 26, 1994

TO: File

FROM: Pamela Grubaugh-Littig, Permit Coordinator

RE: Compliance Review for Section 510(c) Findings, Genwal Coal Company, Crandall Canyon Mine, ACT/015/032-93-1, Folder #5, Emery County, Utah

As of the writing of this letter, there are no violations or cessation orders which are not corrected or in the process of being corrected. There are no finalized Civil Penalties which are outstanding and overdue in the name of Genwal Coal Company.

Finally, Genwal Coal Company does not have a demonstrated pattern of willful violation, nor have they been subject to any bond forfeitures for any operation in the state of Utah.

DATE: 26 SEP 94 APPLICANT VIOLATOR SYSTEM TIME: 11:40:43
APPLICATION EVALUATION REPORT

STATE: UT APPNO: ACT015032 SEQNO: 0 PAGE: 1
APPLICANT'S ENTITY ID: 108257
APPLICANT'S NAME : GENWAL COAL CO INC

SYSTEM RECOMMENDATION IS BASED ON ENTITY OFT

SYSTEM RECOMMENDATION	:	ISSUE
PREVIOUS SYSTEM RECOMMENDATION	:	ISSUE(940919)
OSMRE RECOMMENDATION	:	ISSUE(940919)

F2/PROCEED F3/QUIT F4/MAIN F6/REPORT F9/VIEW VIOL F10/VIEW OFT

usgs A # 09 43

CUMULATIVE HYDROLOGIC IMPACT ASSESSMENT (CHIA)

Crandall Canyon Mine
Genwal Coal Company
ACT\015\032
Emery County, Utah

July 15, 1994

I. INTRODUCTION

This CHIA defines the cumulative hydrologic impact expected to be produced by mining in the federal and state leases shown on Fig. 2. This document updates the Cumulative Hydrologic Impact Analysis prepared for the approved mine plan on April 12, 1991. EarthFax Engineering, Inc. provided the scientific consultation to Genwal on this permit. Some of the EarthFax maps have been incorporated into this CHIA.

The impacts from mining and their effects on adjacent areas are described in a mine plan proposal initially submitted May 13, 1993. The mine plan outlines mining strategies with consideration to the rules and regulations established to maximize protection to natural resources on and by the proposed permit area. The material in this CHIA evaluates those strategies for anticipated coal mining. It assesses the operational procedures proposed in the application to ensure they are designed to prevent damage to the hydrologic balance outside the proposed mine permit during coal mining and reclamation operations. This report complies with federal legislation passed under the Surface Mining Control and Reclamation Act (SMCRA) and subsequent Utah and federal regulatory programs under R614-301-729 and 30 CFR 784.14(f).

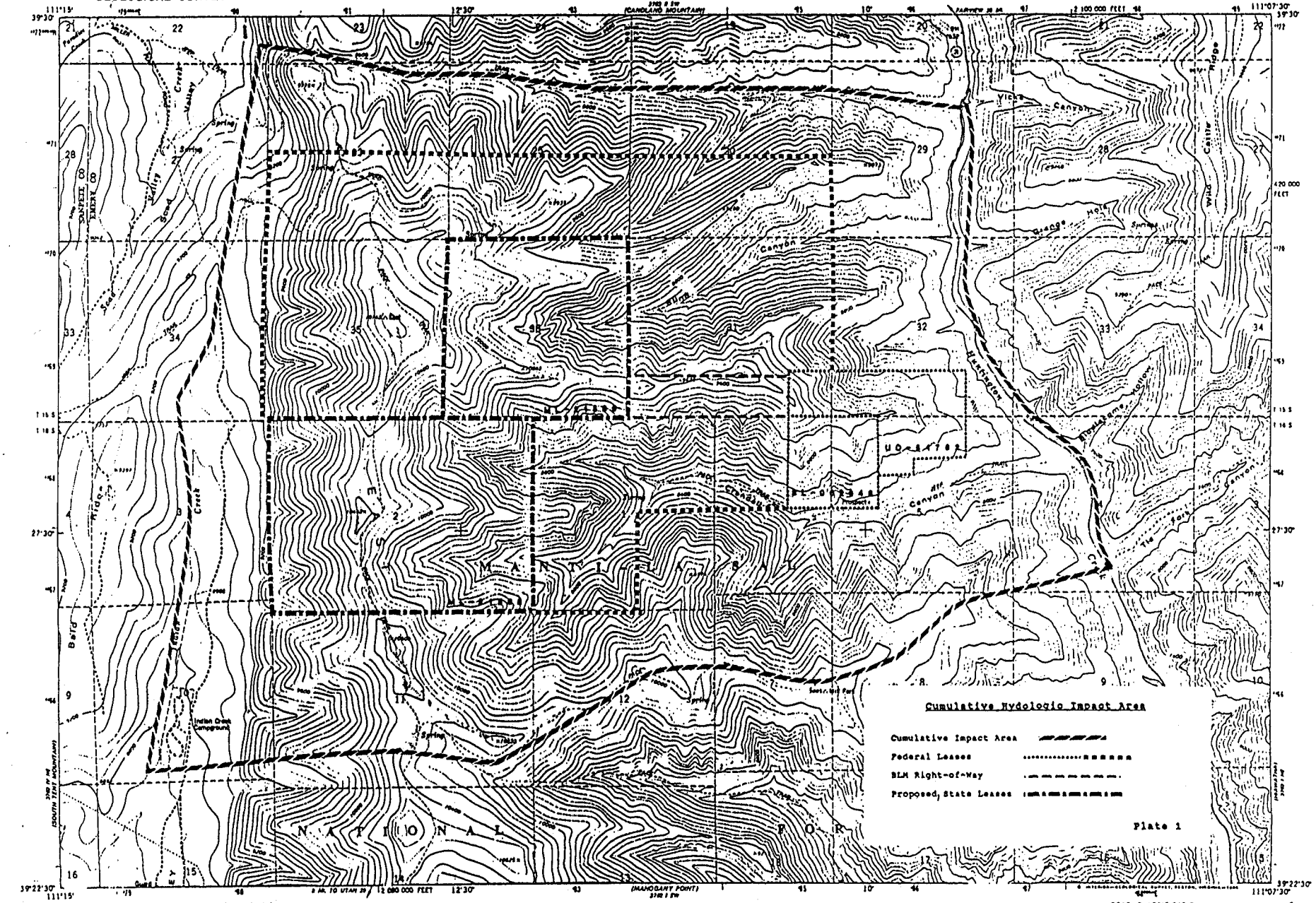
Genwal Coal Company's Crandall Canyon Mine is located along the eastern margin of the Wasatch Plateau Coal Field approximately 15 miles west of Huntington, Utah (Figure 1). Access to the leases will be through the existing mine via federal and state leases (Plate 1).

The eastern margin of the Wasatch Plateau forms a rugged escarpment that overlooks Castle Valley and the San Rafael Swell to the east. Elevations along the eastern escarpment of the Wasatch Plateau range from approximately 6,500 to over 9,000 feet. Outcropping rocks of the Wasatch plateau Coal Field range from Upper Cretaceous to Quaternary in age. The rock record reflects an overall regressive sequence from marine Mancos Shale through littoral and lagoonal (Blackhawk Formation) to fluvial (Castlegate Sandstone, Price River Formation and North Horn

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

STATE OF UTAH
UTAH GEOLOGICAL AND MINERAL SURVEY

UTAH
7.5 MINUTE SERIES (TOPOGRAPHIC)



Mapped, edited, and published by the Geological Survey

Control by USGS, NOS/NOAA, and U.S. Forest Service

Topography by photogrammetric methods from aerial photographs taken 1970. Field checked 1974. Map edited 1979

Projection and 10,000-foot grid ticks: Utah coordinate system, central zone (Lambert conformal conic) 1000-meter Universal Transverse Mercator grid ticks, zone 12, shown in blue. 1927 North American datum

Fine red dashed lines indicate selected fence lines

There may be private inholdings within the boundaries of the National or State reservations shown on this map

To place on the predicted North American Datum 1983 move the projection lines 8 meters north and 64 meters east as shown by dashed corner ticks

UTM GRID AND 1979 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

CONTOUR INTERVAL 80 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929

THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U. S. GEOLOGICAL SURVEY, DENVER, COLORADO 80225, OR RESTON, VIRGINIA 22092
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

UTAH
QUADRANGLE LOCATION

ROAD CLASSIFICATION

Primary highway, hard surface
Light-duty road, hard or improved surface
Secondary highway, hard surface
Unimproved road
Interstate Route
U.S. Route
State Route

RILDA CANYON, UTAH
NW8 MARATHA 15' QUADRANGLE
N3922.5—W11107.5/7.5

1979

DMA 3782 I NW—SERIES V881

Formation) and lacustrine (Flagstaff Formation) depositional environments. Oscillating depositional environments within the general regressive trend are represented by lithologies within the Blackhawk Formation. The major coal-bearing unit within the Wasatch Plateau Coal Field is the Blackhawk Formation.

Precipitation varies from 40 inches at higher elevations to less than 10 inches at lower elevations. The Wasatch Plateau may be classified as semiarid to subhumid.

Vegetation varies from the Sagebrush/Grass community type at lower elevations to the Douglas Fir/Aspen community at higher elevations. Other vegetative communities include Mountain Brush, Pinyon-Juniper, Pinyon-Juniper/Sagebrush and Riparian. These communities are primarily used for wildlife habitat and livestock grazing.

Crandall Creek, which flows past the Crandall Canyon Mine, and Blind Creek and Horse Creek are perennial tributaries to Huntington Creek. Huntington Creek is tributary to the San Rafael River. The upper drainage of Huntington Creek encompasses approximately 200 square miles of mountainous country in the Wasatch Plateau. About 90% of the area is higher than 8,000 feet. The average channel gradient along Huntington Creek is roughly 100 feet per mile. The lower reaches of the tributaries to Huntington Creek typically have surface relief between the stream channels and tops of adjacent canyon walls of 2,000 feet or more.

The west edge of Genwal's permit area drains to Indian Creek and Scad Valley Creek, perennial streams in Joes Valley. Scad Valley Creek flows north into the Left Fork of Huntington Creek. Indian Creek flows south into Cottonwood Creek, another tributary to the San Rafael River.

II. CUMULATIVE IMPACT AREA (CIA)

Plate 1 shows the boundaries of the CIA and the federal and state leases. The CIA incorporates Indian Creek on the east side of the permit area to Huntington Creek on the east, and the ridge separating Rilda Canyon and Crandall Canyon on the south to Horse Canyon on the north. Horse, Blind and Crandall Canyons all drain into Huntington Creek. The CIA incorporates mining effects to Huntington Creek down to Tie Fork Canyon. Several small drainages flow west toward Indian Creek. The hydrologic connection between the drainages and Indian Creek is thought to be at the surface only. The CIA encompasses approximately 8,320 acres.

III. SCOPE OF MINING

Historically, mining was conducted near this site from November of 1939 to September of 1955. Mining by Genwal Coal Company began in 1983. Lease SL-062648 was mined in sequence as Tracts 1 (southern half, 80 acres) and 2 (northern half, 75.2 acres). Lease U-54762 (256.2 acres) was added to the permit and accessed by extending the existing North Main entries. The BLM right-of-way (111.5 acres) allowed access to the contiguous state and federal coal leases. Utah State Coal Leases ML-21568 and ML-21569 were assigned to Genwal in July 1991. Federal Coal Lease The same surface facilities established for mining previous leases will be used in mining the LBA.

The current method of room and pillar mining will be continued. Overall, an advance-retreat mining system is projected for the mine.

The permit area consists of coal lands leased by Genwal Coal Company from the United States Bureau of Land Management (USBLM) and the Utah Division of State Lands plus roughly 1/4 section of fee coal and surface owned by Genwal. The BLM granted a right-of-way to Genwal Coal Company on August 8, 1990 to access the State lease holdings, but that right-of-way has been incorporated into federal lease UTU-68082. Genwal Coal Company presently holds no other coal leases in the area. All adjacent surface lands are administered by the USDA Manti-LaSal National Forest and adjacent coal is administered by the USBLM.

The mine plan submitted by Genwal shows projected mining through the year 2004 with sufficient reserves for several additional years. Access to the coal seam will be through the portals in the Crandall Canyon disturbed area.

IV. STUDY AREA

A. Geology

The formations exposed in the Wasatch Plateau are Tertiary and Cretaceous-aged sedimentary units. These formations are of both continental and marine origin and are comprised principally of shale and sandstone. Siltstone, mudstone and limestone occur in lesser amounts. The formations in the Wasatch Plateau generally dip one to three degrees westward off the west flank of the San Rafael Swell. Regional dips are interrupted by principally east trending fold axes, and principally north trending faults. Joes Valley is a graben separated from the Genwal permit area by the Joes Valley fault, one of the major north trending faults of the Wasatch Plateau.

Stratigraphic units cropping out within the study area include, from oldest to youngest, the Masuk Shale Member of the Mancos Shale, Star Point Sandstone, Blackhawk Formation, Castlegate Sandstone, Price River Formation, North Horn Formation and Quaternary deposits. Lithologic descriptions and unit thicknesses are shown in Figures 2 and 2a.

The Hiawatha Coal Seam is the only coal seam to be mined in the new lease area. It occurs at the base of the Blackhawk Formation. Maximum overburden is approximately 2300 feet in the middle of Section 35, and the minimum overburden lies in the stream channels of Blind and Crandall Canyons where the thickness is 100 feet or less (Figure 3). The entire permit area is underlain by the Star Point Sandstone.

B. Topography and Precipitation

Topography in the area is generally very steep and rugged with elevations ranging from approximately 7,200 feet to over 10,000 feet above sea level. Slopes vary from vertical cliffs to less than 2%.

Precipitation in the Wasatch Plateau ranges from 10 inches to 40 inches annually. Average annual precipitation in the CIA is approximately 20 inches (Simons 1984).

C. Vegetation

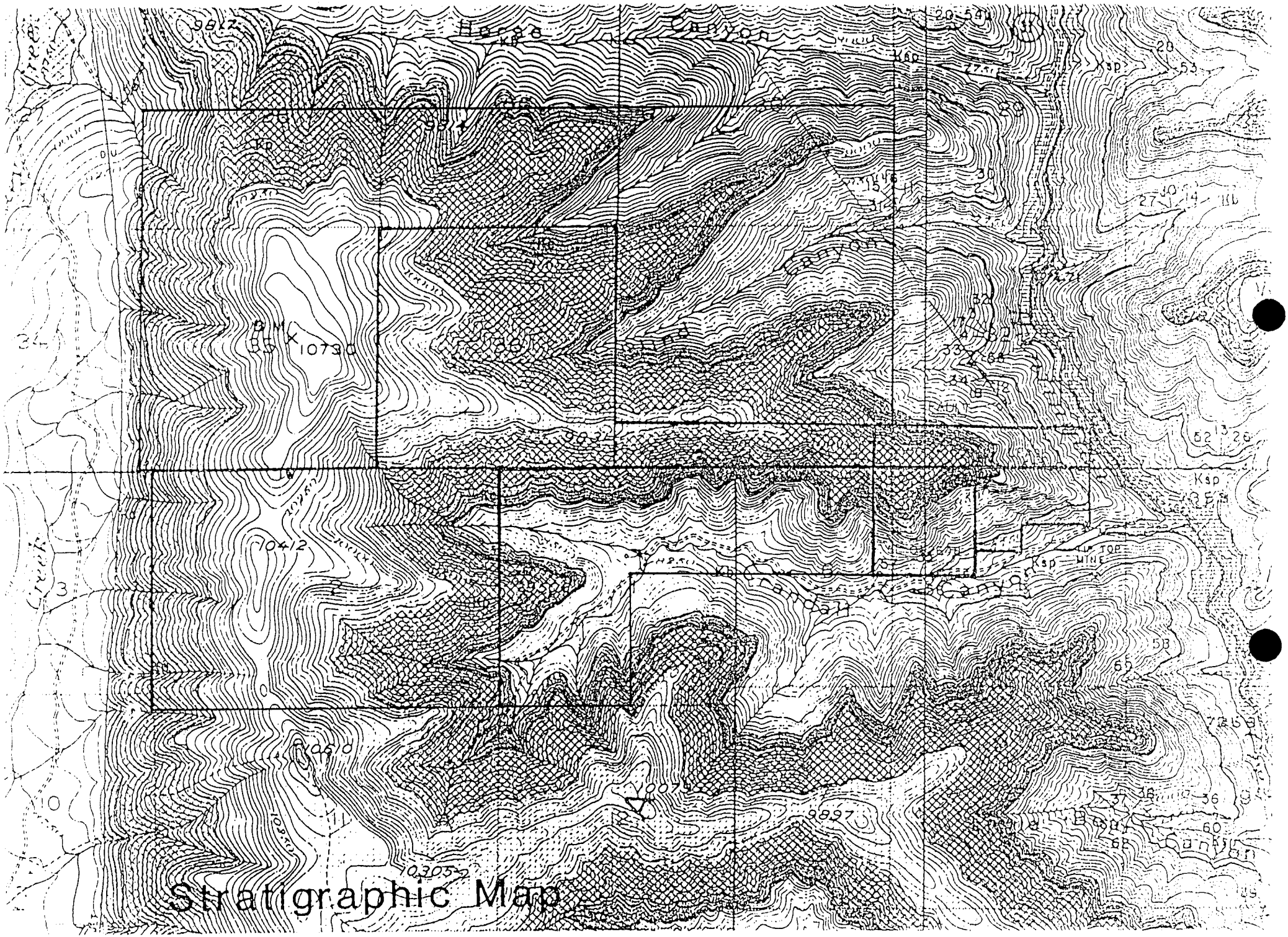
There are five vegetative communities in the CIA including Sagebrush, Mountain Shrub/Grassland, Mixed Mountain Shrub, Conifer/Aspen and Spruce/Fir. Aspen are found on the north facing south slopes and higher up on the north slopes, on ridge tops. Spruce/Fir is also found on the north slopes and appears to be tied to both a moister site as well as areas with less sunlight. Mixed Mountain Shrub and Mountain Shrub/Grassland appear to be transitional and are predominant on the open exposed ridges at approximately mid-slope. The Sagebrush community follows primarily along the ridges and is more than likely climax in nature to the shrub grass associations.

V. HYDROLOGIC RESOURCES

A. Ground Water

The ground water regime within the CIA is dependent upon geologic and climatic parameters that establish systems of recharge, movement and discharge.

Snowmelt at higher elevations provides most of the ground water recharge, particularly where permeable lithologies or fault



Stratigraphic Map

Figure 2

EXPLANATION (continued)

QUATERNARY

Qal — Alluvium
Stratified clay, silt, sand, gravel and some unsorted flood deposits.

Ql — Landslide Deposits
Mixed rubble and blocks of material slumped from formations at higher elevations.

Qg — Gravel Deposits
Partly consolidated poorly sorted and stratified deposits of rock fragments of local origin, pediments or terrace, up to 75 feet thick.

TERTIARY

Tv — Volcanic Flows
Bullion Canyon Series, volcanic flows.

Tg — Green River Formation
Chiefly greenish lacustrine shale and siltstone.

Tc — Colton Formation
Varicolored shale with sandstone and limestone lenses, thickest to the north. 300-1,500 feet.

Tf — Flagstaff Formation
Dark yellow-gray to cream limestone, evenly bedded with minor amounts of sandstone, shale and volcanic ash, ledge former. 200-1,500 feet.

TERTIARY
CRETACEOUS

Tw — North Horn Formation
Variegated shales with subordinate sandstone, conglomerate and freshwater limestone, thickens to north, slope former. 500-2,500 feet.

Kp — Price River Formation
Gray to white gritty sandstone interbedded with subordinate shale and conglomerate, ledge and slope former. 200-1,000 feet.

Kc — Castlegate Sandstone
White to gray, coarse-grained often conglomeratic sandstone, cliff former, weathers to shades of brown. 150-500 feet.

-Unconformity-

Kb — Blackhawk Formation
Yellow to gray, fine- to medium-grained sandstone, interbedded with subordinate gray and carbonaceous shale, several thick coal seams. 600-1,500 feet.

Ksp — Star Point Sandstone
Yellow-gray massive cliff-forming sandstone, often in several tongues separated by Masuk Shale, thickens westward. 90-1,000 feet.

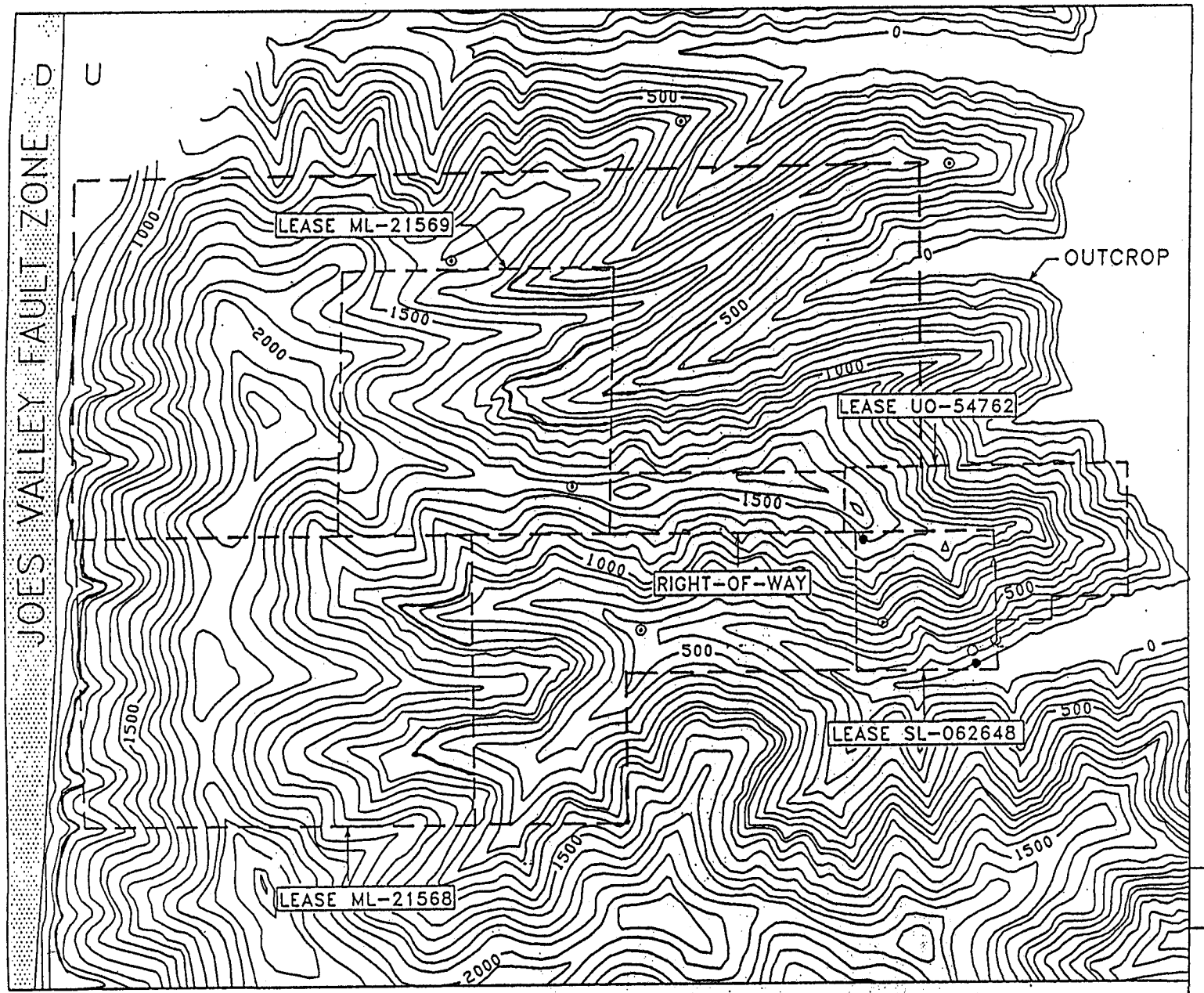
Km — Masuk Shale
Yellow to blue-gray sandy shale, slope former, thick in north and central plateau area thins southward. 300-1,300 feet.

Ke — Emery Sandstone
Yellow-gray friable sandstone tongue or tongues, cliff former, may contain coal (?) in south part of plateau if mapping is correct, thickens to west and south. Coal may be present in subsurface to west. 50-800 feet.

Kbg — Blue Gate Shale
Pale blue-gray, nodular and irregularly bedded marine mudstone and siltstone with several arenaceous beds, weathers into low rolling hills and badlands, thickens northerly. 1,500-2,800 feet.

Kf — Ferron Sandstone
Alternating yellow-gray sandstone, sandy shale and gray shale with important coal beds of Emery coal field, resistant cliff former, thickens to the south. 50-950 feet.

Kt — Tununk Shale
Blue-gray to black sandy marine slope forming mudstone. 400-650 feet.



LEGEND

- OVERBURDEN ISOPACH
- LEASE BOUNDARY
- SURFACE DRILL HOLE
- IN-MINE DRILL HOLE
- MINE SURVEY
- STRATIGRAPHIC CROSS SECTION

N

SCALE

0' 3000'

CONTOUR INTERVAL 100'

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Engineers/Scientists

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ISOPACH MAP OF
HIAWATHA COAL SEAM
OVERBURDEN.

Figure 3

and fractures are exposed at the surface. Vertical migration of ground water occurs through permeable rock units and along zones of faulting and fracturing. Lateral migration occurs where ground water encounters impermeable rocks and continues until either the water is discharged at the surface or other permeable lithologies or zones are encountered that allow further vertical flow.

EarthFax Engineering conducted seep and spring surveys in June/July and October/November of 1985, 1987, 1990, and 1991 and October 1989 and June 1992 (Figure 4). These surveys identified locations of springs and seeps, lithologic and structural controls, and the geologic formation from which springs or seeps issued. Flow rates, use, and field characteristics were determined. Water samples were collected where sufficient flows were present.

Regional ground water conditions were determined from a review of available literature and by studies conducted by the operator. Five drilled monitoring wells were developed to monitor the potentiometric water levels in the Star Point aquifer. Data are collected at four of these sites, the fifth having become inaccessible when a mine section was abandoned.

Six formations crop out in and adjacent to the mine area. According to Doelling (1972), the Masuk Shale Member of the Mancos Shale is a light gray to blue-gray marine sandy shale in the mine vicinity. This unit is exposed at the mouth of Crandall Canyon and in adjacent areas along Huntington Creek. The Masuk Shale Member yields water locally to seeps and springs but does not serve as a regionally important aquifer (Danielson and others, 1981).

The Star Point Sandstone is predominantly a light gray massive sandstone with minor interbedded layers of shale and siltstone near its base (Doelling, 1972). This formation consists of interbedded layers of sandstone, siltstone, shale, and coal, all of marine origin. The Blackhawk is approximately 700 feet thick in the mine area, with the principal coal seam (the Hiawatha seam) occurring near the bottom of the formation. The formation yields water to springs and coal mines when fractured. Where it is locally interbedded with the Star Point Sandstone, the lower portion of the Blackhawk Formation is considered an aquifer (Danielson, and others, 1981).

The Castlegate Sandstone overlies the Blackhawk Formation and consists of tan to brown cliff-forming sandstones of fluvial origin. The sandstones are massive and medium- to coarse-grained. In the area of the mine, the Castlegate yields water locally to seeps and springs but does not serve as an important

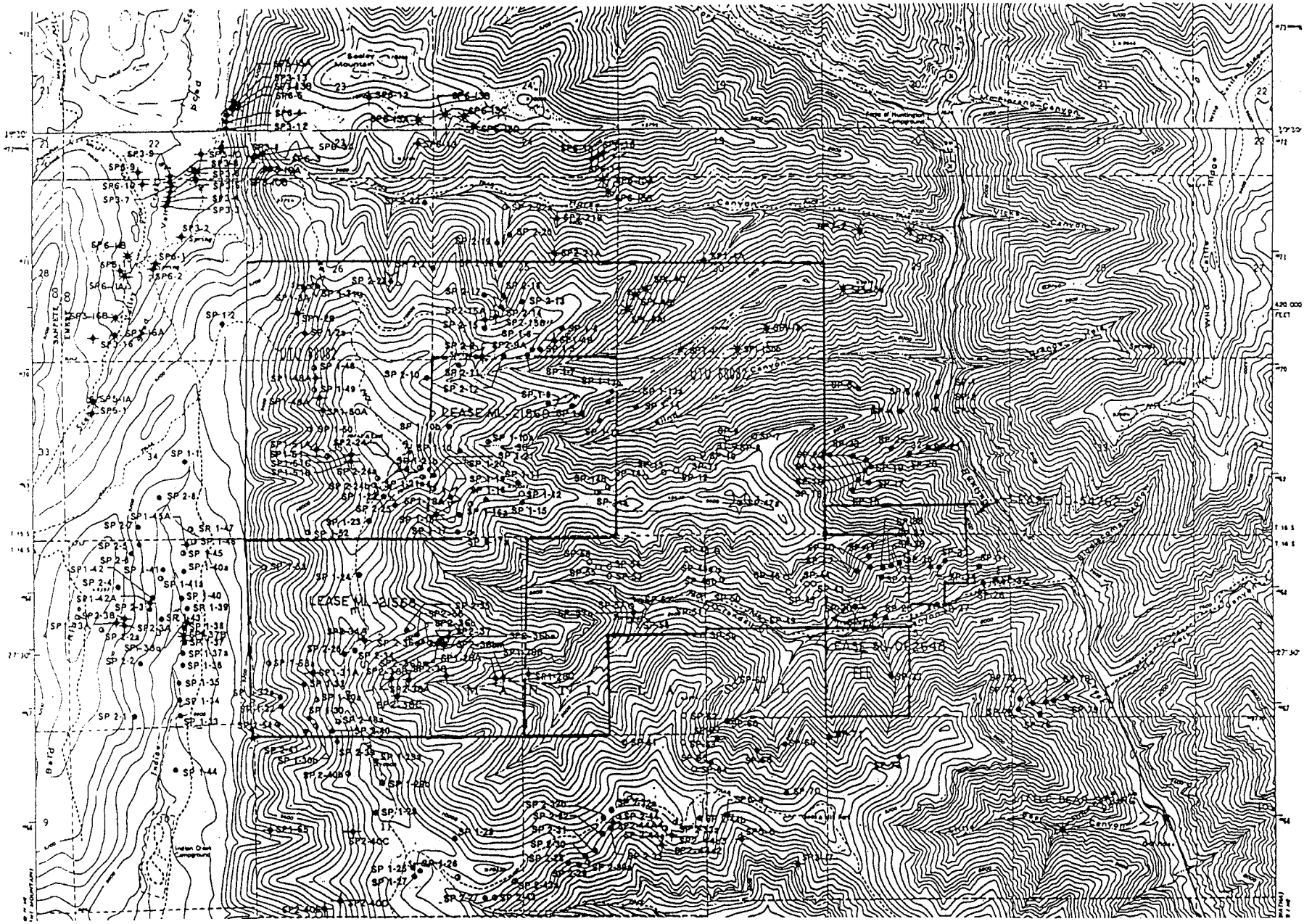


FIGURE 4 SEEP AND SPRING LOCATIONS

regional aquifer because it is commonly drained within short distances from its recharge area due to deeply incised canyons (Danielson and others, 1981).

The Price River Formation consists predominantly of friable limey sandstone interbedded with pebbly conglomerates and shales. It forms steep receding slopes and reaches a maximum thickness of about 500 feet in the mine area (Doelling, 1972). This formation yields water locally to seeps and springs (Danielson and others, 1981). However, like the Castlegate Sandstone, deeply incised canyons in the area prevent the Price River Formation from being an important regional aquifer (Danielson and others, 1981).

The uppermost formation that crops out within the area adjacent to the mine plan area is the North Horn Formation. This formation consists of interbedded limestones, sandstones, and shales (Doelling, 1972). The North Horn Formation in the CIA serves primarily as a recharge unit to underlying formations rather than as an important source of water itself.

Fold axes are principally east trending and faults are principally north trending. Joes Valley is a graben separated from the Genwal coal leases by the Joes Valley fault, one of the major north trending faults of the Wasatch Plateau.

Investigations by Danielson and others, (1981) indicate that most, if not all, ground water in the region is derived from snowmelt. Recharge tends to be limited in areas underlain by the Price River Formation and older rocks due to slope steepness and relative impermeability, both of which promote runoff rather than infiltration of snowmelt.

Several piezometers are located within the permit area, however these are too widely spaced to provide detailed potentiometric surface information. The potentiometric surface is assumed to be shaped by topography, ground water generally moving from recharge areas at higher elevations towards discharge areas at lower elevations, principally along stream channels. Flow is intercepted by deeply incised canyons and modified by geologic structure.

Well MW-1 was installed in March 1987. The well was drilled to a depth of 375 feet, the entire depth being drilled through the Star Point Sandstone. The driller indicated that the Star Point Sandstone was relatively homogeneous except in the zone from 290 to 335 feet, where the sandstone became courser. It is from this zone that the well produces water, with water first being encountered at a depth of about 315 feet. The static water level approximately one week after completion of the well was at a depth of 186.1 feet below ground surface.

Slug tests were performed on well MW-1 to determine hydraulic characteristics of the aquifer. The slug test data were analyzed using a method developed by Bouwer and Rice (1976). Transmissivities were calculated to be approximately 4.5 square feet per day assuming that the 45 foot producing zone accounts for the entire thickness of the aquifer at the site.

Ground water inflow to the existing underground workings amounts to approximately 100 gallons per minute, mostly from older, abandoned areas of the mine near the portals. The inflow is currently being used in the mining process.

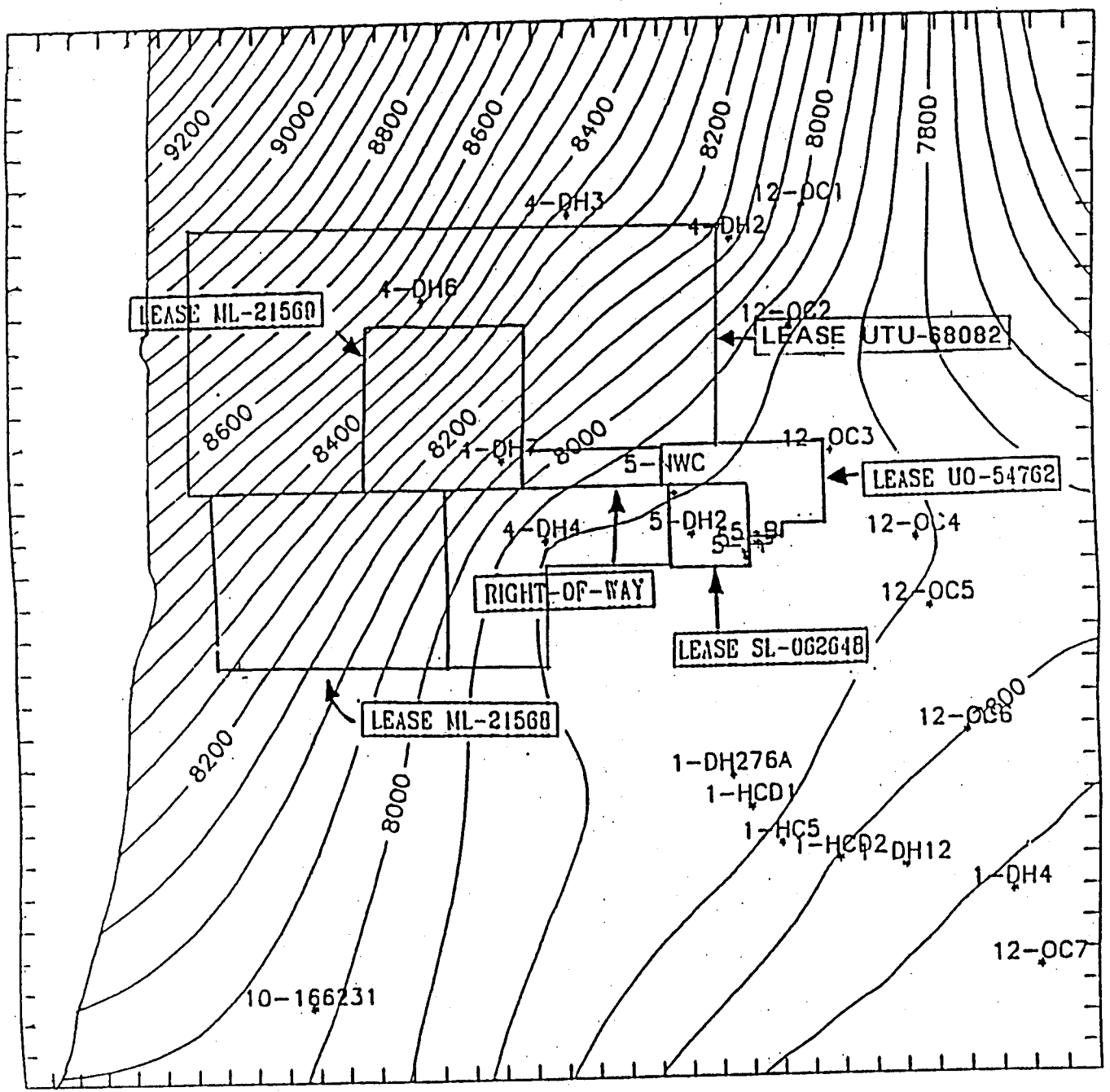
Mine inflow rates were estimated in advance of mining state leases ML-21568 and ML-21569 using Figures 5 and 6. For the mine workings that existed at the time the projections were made, the predicted inflow of 0.33 cfs (148 gpm) from Figure 6 agreed roughly with the measured inflow of 100 gpm. Genwal obtained a modification of the UPDES permit in anticipation of surplus inflow from mining of the state leases. Mining of lease ML-21569 has produced negligible inflow, but plans for future treatment and disposal of water are based on worst case estimates of mine inflow.

Approximately 60% of all seeps and springs discovered during the early-season surveys had flows of one gallon per minute or less. Flows typically decreased by the late-season surveys, with most low-flow sources discharging as seeps only or being dry. In June 1985 a total of 80 seeps or springs were found, of which 34 had sufficient flow to sample and 46 were seeps that could not be sampled. In October 1985, 55 of the sources originally discovered were dry, only 18 had sufficient flow to sample, and 7 existed only as seeps.

Usage of seeps and springs by other than wildlife is minimal due to the generally low flow rates and inaccessibility.

The major water bearing unit is the regional Blackhawk-Star Point aquifer. Perched aquifers in the Blackhawk, Castlegate, Price River, and North Horn strata are separated from each other and from the regional aquifer by vertical permeability barriers and zones of unsaturated rock. The largest percentage of seeps and springs is in the Price River and North Horn Formations and the smallest percentage is in the Castlegate Sandstone. The majority of seeps and springs issue from bedding planes that separate overlying porous sandstone or fractured rock from underlying low permeability siltstone or shale. Such flows were generally low during June inventories (less than one gallon per minute) and nonexistent during October inventories.

The low discharge rates of most seeps and springs issuing from the Blackhawk Formation are due to the overall low hydraulic



CONTOUR INTERVAL 50 FT.

SCALE

0' 5000'

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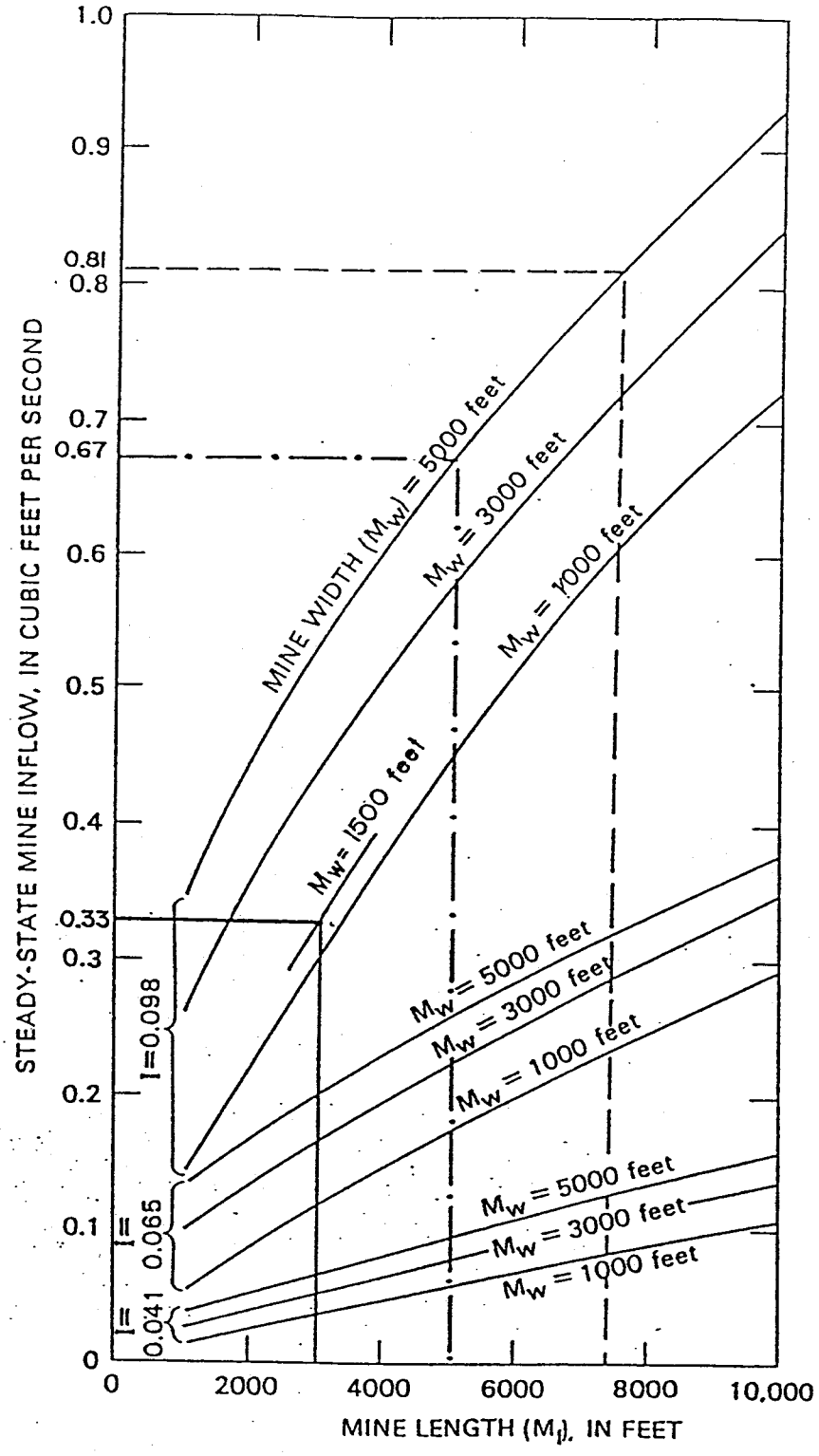
FIGURE 5 STRUCTURE MAP

TOP OF HIAWATHA COAL SEAM



SOURCE: LINES (1985)

——— PRESENT MINE AREA

— — LEASE ML-21568

—·— LEASE ML-21569

Figure 6

PROJECTED GROUNDWATER INFLOW INTO THE NEICO STATE LEASES ML-21568 AND ML-21569 PROPOSED MINE WORKINGS.

EarthFax

conductivity of the formation in its unfractured state. Laboratory permeability data provided by Lines (1985) from a core sample collected in Section 27, T. 17 S., R. 6 E. (approximately 10 miles south of the mine permit area) indicate that sandstone units within the Blackhawk Formation have an average horizontal hydraulic conductivity of 1.3×10^{-2} feet per day and an average vertical hydraulic conductivity of 3.8×10^{-3} per day. Shales and siltstones within the Blackhawk Formation were found to have maximum horizontal and vertical hydraulic conductivities of 1.0×10^{-7} and 1.2×10^{-6} feet per day, respectively.

On the other hand, the hydraulic conductivity of unfractured sandstones of the Blackhawk Formation is relatively large in comparison with that of the siltstones and shales. The fine grained sediments serve as barriers to downward movement of water. As water recharges the Blackhawk Formation from snowmelt, rainfall, or subsurface seepage from an adjacent formation, it percolates downward through the sandstone beds. Where a less permeable siltstone or shale layer is encountered, lateral flow through the sandstone offers less resistance. Lateral flow continues until the water encounters a new, less resistant path downward or is discharged at the surface.

A few springs that issue from fractured sandstone within the Blackhawk Formation are notable exceptions to the generalities given above. Springs SP-53 through SP-57, located on the north slopes of Crandall Canyon, flowed at rates of up to 15 gallons per minute during both June and October 1985 inventories. Travertine deposits are common at these springs, suggesting that the recharge area for these springs is dominated by limestone, probably the North Horn Formation on the ridges to the north. The fractured Blackhawk Formation apparently serves more as a conveyance body rather than a significant source of water to these springs.

Several seeps and springs issue where colluvium overlies sandstones of the Blackhawk and Castlegate formations. These seeps normally occur in drainage bottoms where shallow subsurface water collects at topographic lows. Nearly all flows from seeps of this type were insignificant in both June and October surveys, suggesting that these seeps are intermittent in nature.

Results of the seep and spring inventories tend to support the conclusion of Danielson and others, (1981) that ground water occurs in most geologic formations at the site, but none of the units are saturated everywhere. Based on the conclusions of Danielson and others, (1981) it is assumed that ground water within the permit and adjacent areas flows toward the main canyons and then along Huntington Canyon towards Castle Valley.

The predominant chemical constituents in most springs in the region are calcium and bicarbonate (Danielson and others, 1981). Dissolved solids concentrations generally range from about 50 mg/l to 750 mg/l. Regionally, the concentrations of major dissolved constituents in water from individual geologic units is highly variable, due to the complex lithologic nature of the area (Danielson and others, 1981).

Data indicate that the specific conductance of water issuing from springs in June generally increased with increasing stratigraphic depth. This is in agreement with findings of Danielson and others (1981). Springs issuing from the North Horn and Price River Formations typically had a specific conductance during the June surveys that varied from 150 to 450 umhos/cm at 25°C. Those issuing from the Blackhawk Formation and Star Point Sandstone had specific conductance up to 1000 umhos/cm at 25°C. This increase in specific conductance is indicative of leaching of minerals by the ground water as it flows through increasing distances of bedrock to the lower stratigraphic positions. In 1991 there was an overall increase in conductivity in water issuing from all formations: almost all sampled waters from the Blackhawk and Star Point Formations and a small group of sampled waters from the North Horn Formation had conductivities that exceeded 1000 umhos/cm at 25°C.

The pH of water issuing from springs in the survey area showed no trends within or between formations. Values varied from 6.69 to 8.98, with most lying between 7 and 8, so spring water in the study area is slightly alkaline.

In those springs with sufficient water to sample, pH generally increased slightly between June and October. Increases normally amounted to 0.1 to 0.5 pH unit. Specific conductance showed no consistent pattern between the June and October data, with approximately as many increases as decreases between June and October.

A list of water rights was obtained from the files of the Utah Division of Water Rights in October 1992. All water rights are held by the USDA Forest Service and Utah State Division of State Lands and Forestry for stockwatering from streams and springs.

B. Surface Water

Crandall, Horse, and Blind Canyons drain roughly three-quarters of the CIA. Streams in these canyons flow eastward into Huntington Creek, which is one of the major tributaries of the San Rafael River. Crandall Creek is perennial upstream of the disturbed area to at least where the two main forks join in Section 1, T. 16 S., R. 6 E. (Plate 1) and probably along part of

the north fork. The two forks of upper Horse Canyon are intermittent, but from where the forks join down to the confluence with Huntington Creek the stream appears to be perennial. The stream in Blind Canyon is intermittent. There are also several small ephemeral drainages that flow directly to Huntington Creek.

Ephemeral streams discharge from the west flank of East Mountain into Indian and Scad Valley Creeks, perennial streams in Joes Valley. Scad Valley Creek flows north into the Left Fork of Huntington Creek. Indian Creek flows south to Joes Valley Reservoir, then the water flows southeast to the San Rafael River by way of Straight Canyon and Cottonwood Creek.

Approximately 50% to 70% of flow in the mountain streams of the region occurs during May through July. Streamflow during this late spring/early summer period is the result of snowmelt runoff. Such seasonal variations are common for streams in the area (Waddell and others, 1981).

Huntington Creek had annual flows near Huntington that ranged from 25,000 to 150,000 acre-feet during the period of October 1931 through September 1973. Average flow was 65,000 acre-feet per year (Waddell and others, 1981). Flow in Cottonwood Creek is of the same magnitude as Huntington Creek.

The quality of water in Huntington and Cottonwood Creeks and similar streams in the area varies significantly with distance downstream. Waddell and others (1981) found that concentrations of dissolved solids varied from 125 mg/l to 375 mg/l upstream of major diversions at the mouths of the canyons to 1600 mg/l to 4025 mg/l in reaches below major irrigation diversions and population centers. The major ions at the upper sites were found to be calcium, magnesium, and bicarbonate, whereas sodium and sulfate became more dominant at the lower sites. These changes were attributed to (1) diversion of water containing low dissolved solids concentrations, (2) subsequent irrigation and return drainage from moderate to highly saline soils, (3) ground water seepage, and (4) inflow of sewage and pollutants from population centers.

Average annual sediment yields within the Huntington and Cottonwood Creek drainage basins range from approximately 0.1 acre-feet per square mile in the headwaters area to about 3.0 acre-feet per square mile near the confluences with the San Rafael River. Increases in sediment yield with increasing distance downstream are generally the result of increasing amounts of shale and sandstone in the downstream direction (Waddell and others, 1981).

The U.S. Geological Survey (USGS) monitored a gauging station at the mouth of Crandall Creek from 1978 to 1984. Flow data collected at the gauging station are not complete for the winter in most years, due presumably to data acquisition problems. However, the limited data indicate that most of the flow of Crandall Creek occurs in the period of May through July, in keeping with the conclusions of Waddell (Waddell and others, 1981). Assuming an average of 30 acre-feet per month for the period of missing record, the average annual flow for the six-year period of data was 2740 acre-feet. The maximum daily flow rate recorded by the USGS was 88 cfs on May 30, 1983. The minimum was 0.28 cfs recorded on several days in September 1981.

Genwal has maintained two 36-inch Parshall flumes in Crandall Creek, just above and below the surface facilities, since 1988. Between May 1988 to October 1992, maximum reported flow at the upper flume was 26.79 cfs in May 1988 and the minimum was 0.38 cfs in September 1990. (The lower flume consistently recorded lower flows than the upper flume, e.g., the lower flume was reported to be intermittently dry in May 1992 while the upper flume recorded 0.82 cfs to 1.12 cfs: the reason for this discrepancy between the two flumes has not been explained.)

Surface water quality data collected from Crandall Creek by Genwal indicate that the dominant ions in Crandall Creek are calcium and bicarbonate. Total dissolved solids concentrations in the stream have varied from 180 mg/l to 286 mg/l, with lower concentrations normally occurring during the high flow season. Total suspended solids (TSS) concentrations in Crandall Creek have varied during the period of record from 0.5 mg/l to 208.0 mg/l. As expected, the highest suspended solids concentrations generally occur during periods of highest flow.

In July 1991 Genwal installed a 12-inch Parshall flume near the mouth of Blind Canyon. In 1991 and 1992 maximum flow was 1.84 cfs (August 1991). The stream was dry for most of September and October 1992 according to the flume chart recorder, and field checks in September and December also found the flume dry. In seven water quality samples collected from November 1990 to December 1991, TDS was 253 mg/l to 293 mg/l and TSS was 8 mg/l to 54 mg/l.

The USFS measured instantaneous flow in Indian Creek from July 1970 to April 1977, mainly during May, June, and July. The location was in Section 17, T. 17 S., R. 6 E. Flow during those months varied from 38.6 cfs (May 1973) to 0.25 cfs (July 1974). When it was measured, flow in August, September, and October was generally lower than flow measured in the preceding months of the same year. Genwal installed a 36-inch Parshall flume with water level recorder in Indian Creek in 1992 or 1993, but no data were submitted with the proposed mine plan.

Water quality in Indian Creek was analyzed by the USFS from 1971 to 1978. Conductivity at 25°C averaged 333 umhos/cm, with a high of 485 umhos/cm and a low of 230 umhos/cm. Total iron averaged 0.03 mg/l over a range of 0.114 mg/l to 0.0001 mg/l, and pH averaged 8.5 with a range of 9.3 to 6.2. Suspended solids in excess of 50,000 mg/l were reported. Genwal has committed to collect quarterly water quality samples from Indian Creek at the flume.

VI. POTENTIAL HYDROLOGIC IMPACTS

A. Impacts on Water Quantity

Interception of ground and surface water and consumption of water by mining processes are the greatest potential impacts on the quantity of the water resources in the CIA.

Interception of Water from the Regional Aquifer

Natural inflow into the existing underground workings is estimated to be approximately 700,000 gallons per year, less than 2 gpm. All natural inflow is used in the mining operation. Inflow into the Crandall Canyon Mine was projected by EarthFax Engineering, Inc. using the model developed by Lines (1985) for the Trail Mountain Mine. Projected inflow before the state leases were added to the permit was 150 gpm, and state lease ML-21569 was projected to add another 300 gpm when fully developed. These projected inflows have not occurred because, based on Genwal's maps, the potentiometric surface is 9 feet to 111 feet below the top of the Hiawatha coal seam and has not been intercepted in areas where coal has been mined. Mining will probably not intercept the potentiometric surface over most of the area to be mined. Drawdown of the potentiometric surface within or adjacent to the permit area is not expected. Springs that discharge from the Star Point Sandstone, such as Little Bear Spring, should not be affected.

Interception of Perched Ground Water and Fracture Flow Systems

Seeps and springs discharging from strata above the Hiawatha coal seam originate from localized perched aquifers and are often associated with fractures. Vertical and lateral migration of water through strata above the coal seam appears to be largely controlled by fracture conduits. Perched aquifers are dewatered if breached by advancing mine workings: inflows from such perched aquifers tend to be of short duration, one month or less, and limited volume, 10 gpm or less. Springs fed through a fracture flow system could go dry if a segment of the system were to be intercepted by the mine.

Subsidence induced extension and expansion of existing fractures and upward propagation of new fractures could result in interception and draining of overlying perched or fracture systems. Such a readjustment or realignment in the conduit system has the potential to reconfigure ground water flow. Possible changes include increased flow rates through fractures that have opened, diversion of flow through new fractures or newly exposed permeable lithologies, either decrease or increase of flow from existing springs and seeps, and appearance of new seeps and springs.

Long term effects would probably be minimal. In the Wasatch Plateau perched systems are generally of small areal extent. Subsidence-caused tension fractures in the Wasatch Plateau coal field have been documented to close, partially to completely, as stresses resulting from subsidence redistribute themselves. Clay minerals, which are abundant in the Blackhawk Formation, tend to flow plastically when wet and under pressure. In addition some of the clay minerals swell when wetted. Plastic flow and swelling of clays promote sealing of cracks in the Blackhawk Formation over a relatively short period of time. Over a longer time, deposition of carbonate minerals also tends to seal fractures. As fractures close and are sealed, a new equilibrium is established in the disrupted ground water systems. No impacts from interception of perched ground water and fracture flow systems are anticipated beyond the permit boundary.

Interception of Surface Water

Should subsidence fractures extend to the surface and intercept a drainage channel, there would be a possibility of capturing surface flow. The Crandall Canyon Mine protects perennial streams from subsidence by avoiding retreat mining in buffer zones beneath and adjacent to the channels. Ephemeral and intermittent channels are not protected from mining induced subsidence.

The potential for significant loss of surface water to subsidence cracks appears minimal based on hydrologic and geologic information, as discussed above, and past experience in the Huntington Canyon drainage. To better document this conclusion, the Blind Canyon drainage is being studied by the USFS Intermountain Research Station with cooperation from several other government agencies and Genwal. In addition to determining effects of retreat-mining induced subsidence on stream flow and interconnectivity of surface and ground water, goals are to determine changes in channel relief and morphology, watershed erosion, and sediment routing. The final report is due September 1995.

Consumption of Water

Water consumed by the mining operation is a combination of water added to the coal during the mining process and water that occurs naturally in the coal. Water from both sources is shipped from the mine along with the coal at a rate Genwal estimates to average approximately 40 gpm. Water consumed in the mining process is mainly surface water pumped from Crandall Creek but includes water pumped from MW-1 and perched ground water intercepted by the mine. Mine process water is stored in underground sumps and flows through channels in the mine floor; Genwal estimates that loss of water through seepage is low, 10 gpm, due to the low permeability of strata immediately underlying the coal seam. It is estimated that mine ventilation extracts approximately 50 to 60 gpm from the mine and discharges it to the atmosphere.

Genwal has committed not to pump water from Crandall Creek at a rate that will decrease flow below the minimum required. This minimum will be determined in consultation with the USFS.

B. Impacts on Water Quality

The main water quality concern is increased suspended sediments downstream from the minesite. Other factors associated with mine operations and coal transport that could affect water quality are fugitive dust, leaching from acid- or toxic-forming materials, mine water discharges, and hydrocarbon spillage. Surface disturbance from subsidence could increase sediment load in streams away from the surface facilities.

Increased Sediment Loading

The permit area is drained by perennial, ephemeral, and intermittent drainages. Watershed slopes are steep but well vegetated. Measured TSS concentrations in Crandall Creek have varied during the period of record from 0.5 mg/l to 208.0 mg/l.

Sediment yield will naturally increase from areas disturbed by the operation. All runoff and sediment from the disturbed area is contained or treated and impacts from mining in Crandall Canyon are minimized. A sediment pond receives the runoff and sediment from the majority of disturbed area and also from several undisturbed areas. There are eight small disturbed areas that do not drain to the sediment pond. Sediment yield from these areas is minimized through the use of sediment traps, straw bale dikes, silt fences, and vegetation. Sediment yield from the disturbed area is minimized by the installation and maintenance of these controls.

The coal beneath Blind Canyon has been retreat mined and the effects of subsidence on watershed erosion and stream flow are being studied under the direction of the USFS Intermountain Research Station. As part of the agreement with the USFS that implemented the study, the worst-case amount of increased sediment load from Blind Canyon was calculated. Based on those predictions, Genwal committed to pay for work in another part of the Huntington Creek drainage to reduce sediment yield by an equivalent amount. The result should be no net increase of sediment outside the CIA.

Fugitive Dust

Reduced air quality and surface water quality are potential impacts from fugitive dust from mine operations. Particulate emissions from roads, unpaved areas of the pad, reclamation activities, and coal loading operations could degrade air quality. Particulates that settle outside the area that drains to the sediment pond have the potential to produce a measurable increase in dissolved and suspended solids in Crandall Creek.

Fugitive dust is minimized by pavement on roads and pads, water sprays in the coal handling process, and contemporaneous reclamation. Minimizing dust production through these procedures will minimize the potential for material damage to the hydrologic balance outside the permit area.

Oil and Grease

Use of oil, grease, petroleum fuels, and hydrocarbon based products in the mine permit areas creates the possibility of contamination in and adjacent to the mine. Contamination could result from spillage during equipment maintenance, spillage during filling of fuel tanks, or leakage from equipment. Contamination could affect soils, ground water, and surface water.

All areas where equipment is operated drain to the sedimentation pond, which is equipped with an oil and grease skimmer to prevent release of hydrocarbons. Impacts from spillage will be mitigated by implementation of the SPCC plan.

Mine Water Discharge

To date, almost all water seeping into the mine has been consumed by mining processes. There have been no discharges from the Crandall Canyon Mine since 1990, with three discharges each of limited duration and quantity prior to 1990. Mine discharge passes through the sedimentation pond before entering Eccles Creek. Discharge from the pond is regulated under a UPDES permit. Projections of future mine operations do not indicate a

significant increase of flow into the mine or of need to discharge water from the mine.

Acid- and Toxic-Forming Materials

Waste rock is not brought from the mine. Incidental amounts of waste rock produced by mine operations are left underground. All waters encountered underground have a slightly alkaline nature and do not exhibit acid- or -toxic-characteristics. If needed, plans are in place for handling of earth, refuse, or acid- or toxic-forming materials and preventing or controlling discharge of pollutants to the hydrologic system. Analyses of roof and floor rock samples show no acid- or toxic-forming characteristics.

Flooding or Stream Alteration

All diversions are sized for a 25 year - 24 hour storm event. The sediment pond, ditches, and culverts are sized for a 10 year - 24 hour storm event. These designs minimize the potential for flooding.

There has been no stream alteration, but the sediment pond is close enough to Crandall Creek that there is a possibility for erosion of the sediment pond embankment. The toe of the embankment has been armored with 2 feet of 12.5 inch D50 rip rap. Analysis of Crandall Creek flow and the pond protection indicates the rip rap should provide adequate protection for a return period in excess of 10,000 years. Slope stability analysis also indicates the pond embankment meets required safety standards.

VII. STATEMENT OF FINDINGS

No potential for material damage outside the permit area has been found. No cumulative impacts have been identified. The operational design proposed for the Crandall Canyon Mine is herein determined to be consistent with preventing material damage to the hydrologic balance outside the mine plan area.

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AFFIDAVIT OF PUBLICATION

ICATION

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Carbon,)

I, Kevin Ashby, on oath. say that I am the Publisher of the Sun Advocate, a twice-weekly newspaper of general circulation, published at Price, State and County aforesaid, and that a certain notice, a true copy of which is hereto attached, was published in the full issue of such newspaper for 5 (Five) consecutive issues, and that the first publication was on the 3rd day of May, 1994 and that the last publication of such notice was in the issue of such newspaper dated the 31st day of May, 1994.

Kevin Ashby

Kevin Ashby - Publisher

Subscribed and sworn to before me this 31st day of May, 1994

Linda Thayn

Notary Public My commission expries January 10, 1995 Residing at Price, Utah

Publication fee, $234.00

NOTARY PUBLIC
LINDA THAYN
811 NORTH 10TH EAST
PRICE, UT 84501
My Commission Expires Jan. 10, 1995
State of Utah

PUBLIC NOTICE FOR SIGNIFICANT REVISION
CRANDALL CANYON No. 1 MINE
P.O. BOX 1201
HUNTINGTON, UTAH 84528

Notice is hereby given that Genwal Coal Company, P.O. Box 1201, 195 North 100 West, Huntington, Utah 84528, a subsidiary owned jointly by Intermountain Power Authority and Nevada Power Investment Corporation, has submitted with the Utah Division of Oil, Gas and Mining, a complete application for a revision to the existing Mine and Reclamation Plan, ACT/015/032. The existing plan is approved under the permanent program of the Utah Department of Natural Resources, Division of Oil, Gas and Mining. This revision involves the addition of Federal coal lease UTU-68082, which entails the extension of existing underground workings, with no surface disturbance.

Federal Lease UTU-68082 is described as follows:

T.15 S., R.6 E., SLM, Utah
Sec. 25, S2; 320
Sec. 26, S2; 320
Sec. 35, all. 640
T.15 S., R.7 E., SLM, Utah
Sec. 30, lots 7-12, SE;
Sec. 31, lots 1-12, NE, N2SE, SWSE.
T.16 S., R.6 E., SLM, Utah
Sec. 1, lots 1-12, SW.
T.16S., R.7 E., SLM, Utah
Sec. 6, lots 2-4, SWNE.

3384.02

Federal Lease UTU-68082 contains 2,979.49 acres, more or less.

The surface ownership above this coal lease is The Department of Agriculture, United State Forest Service. A copy of this revision is available for inspection at the Emery County courthouse, Castle Dale, Utah and the Division of Oil, Gas and Mining, 355 West North Temple, #3 Triad Center, Suite 350, Salt Lake City, Utah. Comments should be addressed to the Utah Division of Oil, Gas and Mining, at the address above.

Published in the Sun Advocate on May 3, 10, 17, 24 and 31, 199.

SURETY

SAFECO®

SURETY RIDER

SAFECO INSURANCE COMPANY OF AMERICA
GENERAL INSURANCE COMPANY OF AMERICA
FIRST NATIONAL INSURANCE COMPANY OF AMERICA
HOME OFFICE: SAFECO PLAZA
SEATTLE, WASHINGTON 98185

To be attached to and form a part of

Bond No. 4689175

Type of Bond: Reclamation

dated effective May 10, 1990
(MONTH-DAY-YEAR)

executed by Genwal Coal Company, as Principal,
(PRINCIPAL)

and by SAFECO INSURANCE COMPANY OF AMERICA, as Surety,

in favor of State of Utah
(OBLIGEE)

in consideration of the mutual agreements herein contained the Principal and the Surety hereby consent to changing

The bond penalty from $268,000.00 (Two Hundred Sixty Eight Thousand dollars & no/100) to $703,000.00 (Seven Hundred Three Thousand dollars and no/100)

And adding the wording:

"In the event the Cooperative Agreement between the Division and OSM is terminated, then the portion of the bond covering the Federal Lands will be payable only to the United States, Department of Interior, Office of Surface Mining."

Nothing herein contained shall vary, alter or extend any provision or condition of this bond except as herein expressly stated.

This rider is effective September 21, 1993
(MONTH-DAY-YEAR)

Signed and Sealed September 7, 1993
(MONTH-DAY-YEAR)

(PRINCIPAL)
By: Denise D. Wood - Treasurer
(PRINCIPAL)

SAFECO INSURANCE COMPANY OF AMERICA

By: Georgia L. Nelson
(ATTORNEY-IN-FACT) Georgia L. Nelson

S-443/EP 3/90

SAFECO®

POWER OF ATTORNEY

SAFECO INSURANCE COMPANY OF AMERICA
GENERAL INSURANCE COMPANY OF AMERICA
HOME OFFICE: SAFECO PLAZA
SEATTLE, WASHINGTON 98185

No. 9318

KNOW ALL BY THESE PRESENTS:

That **SAFECO INSURANCE COMPANY OF AMERICA** and **GENERAL INSURANCE COMPANY OF AMERICA**, each a Washington corporation, does each hereby appoint

********** GEORGIA L. NELSON **********

its true and lawful attorney(s)-in-fact, with full authority to execute on its behalf fidelity and surety bonds or undertakings and other documents of a similar character issued in the course of its business, and to bind the respective company thereby.

IN WITNESS WHEREOF, SAFECO INSURANCE COMPANY OF AMERICA and **GENERAL INSURANCE COMPANY OF AMERICA** have each executed and attested these presents

this 4th day of January, 19 93.

CERTIFICATE

Extract from the By-Laws of **SAFECO INSURANCE COMPANY OF AMERICA** and of **GENERAL INSURANCE COMPANY OF AMERICA:**

"Article V, Section 13. - FIDELITY AND SURETY BONDS . . . the President, any Vice President, the Secretary, and any Assistant Vice President appointed for that purpose by the officer in charge of surety operations, shall each have authority to appoint individuals as attorneys-in-fact or under other appropriate titles with authority to execute on behalf of the company fidelity and surety bonds and other documents of similar character issued by the company in the course of its business . . . On any instrument making or evidencing such appointment, the signatures may be affixed by facsimile. On any instrument conferring such authority or on any bond or undertaking of the company, the seal, or a facsimile thereof, may be impressed or affixed or in any other manner reproduced; provided, however, that the seal shall not be necessary to the validity of any such instrument or undertaking."

Extract from a Resolution of the Board of Directors of **SAFECO INSURANCE COMPANY OF AMERICA** and of **GENERAL INSURANCE COMPANY OF AMERICA** adopted July 28, 1970.

"On any certificate executed by the Secretary or an assistant secretary of the Company setting out,

(i) The provisions of Article V, Section 13 of the By-Laws, and
(ii) A copy of the power-of-attorney appointment, executed pursuant thereto, and
(iii) Certifying that said power-of-attorney appointment is in full force and effect.

the signature of the certifying officer may be by facsimile, and the seal of the Company may be a facsimile thereof."

I, R. A. Pierson, Secretary of **SAFECO INSURANCE COMPANY OF AMERICA** and of **GENERAL INSURANCE COMPANY OF AMERICA**, do hereby certify that the foregoing extracts of the By-Laws and of a Resolution of the Board of Directors of these corporations, and of a Power of Attorney issued pursuant thereto, are true and correct, and that both the By-Laws, the Resolution and the Power of Attorney are still in full force and effect.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the facsimile seal of said corporation

this 7th day of September, 19 93.

UT 0067
Crandall Cyn

May 1990
Exhibit "B" - BONDING AGREEMENT
SURETY BOND #4689175
Annual Premium: $3,350.00

Permit Number : ACT/015/032
Expiration Date: May 13, 1993

(FEDERAL COAL)
SURETY BOND

THIS SURETY BOND entered into and by and between the undersigned OPERATOR, and SURETY COMPANY, hereby jointly and severally bind ourselves, our heirs, administrators, executors, successors and assigns, unto the State of Utah, Division of Oil, Gas and Mining, and, the U. S. Department of Interior, Office of Surface Mining Reclamation and Enforcement (OSMRE) in the penal sum of Two Hundred Sixty-Eight Thousand and no/100 dollars ($268,000.00) for the timely performance of reclamation responsibilities of the surface disturbance described in Exhibit "A" of this reclamation agreement.

This SURETY BOND shall remain in effect until all applicable rules and the OPERATOR'S reclamation obligation have been met and released by the Division of Oil, Gas and Mining.

Terms for release or adjustment of this BOND are as written and agreed to by the DIVISION and the OPERATOR in the RECLAMATION AGREEMENT incorporated by reference herein, to which this SURETY AGREEMENT has been attached as Exhibit "B".

May 1990
Exhibit "B" - BONDING AGREEMENT
SURETY BOND

So agreed this 10th day of May, 1990.

FOR THE OPERATOR: GENWAL COAL COMPANY

by: _____ TREAS

FOR THE SURETY: SAFECO INSURANCE COMPANY OF AMERICA

by: _____
Crysta J. Powell, attorney-in-fact

COUNTERSIGNED FOR UTAH: MERIT INSURANCE AGENCY, INC.

by: _____

ACCEPTED BY THE STATE
OF UTAH:

by: _____

Note: An Affidavit of Qualification must be completed and attached to this form for each authorized agent or officer. Where one signs by virtue of Power of Attorney for a company, such Power of Attorney must be filed with this agreement. If the Principal is a corporation, the agreement shall be executed by its duly authorized officer.

SAFECO

POWER OF ATTORNEY

SAFECO INSURANCE COMPANY OF AMERICA
HOME OFFICE: SAFECO PLAZA
SEATTLE, WASHINGTON 98185

No. 5182

KNOW ALL BY THESE PRESENTS:

That SAFECO INSURANCE COMPANY OF AMERICA, a Washington corporation, does hereby appoint

----------CRYSTA J. POWELL, Las Vegas, Nevada----------

its true and lawful attorney(s)-in-fact, with full authority to execute on behalf of the company fidelity and surety bonds or undertakings and other documents of a similar character issued by the company in the course of its business, and to bind SAFECO INSURANCE COMPANY OF AMERICA thereby as fully as if such instruments had been duly executed by its regularly elected officers at its home office.

IN WITNESS WHEREOF, SAFECO INSURANCE COMPANY OF AMERICA has executed and attested these presents this 22nd day of August, 19 88.

CERTIFICATE

Extract from the By-Laws of SAFECO INSURANCE COMPANY OF AMERICA:

"Article V, Section 13. — FIDELITY AND SURETY BONDS . . . the President, any Vice President, the Secretary, and any Assistant Vice President appointed for that purpose by the officer in charge of surety operations, shall each have authority to appoint individuals as attorneys-in-fact or under other appropriate titles with authority to execute on behalf of the company fidelity and surety bonds and other documents of similar character issued by the company in the course of its business . . . On any instrument making or evidencing such appointment, the signatures may be affixed by facsimile. On any instrument conferring such authority or on any bond or undertaking of the company, the seal, or a facsimile thereof, may be impressed or affixed or in any other manner reproduced; provided, however, that the seal shall not be necessary to the validity of any such instrument or undertaking."

Extract from a Resolution of the Board of Directors of
SAFECO INSURANCE COMPANY OF AMERICA adopted July 28, 1970.

"On any certificate executed by the Secretary or an assistant secretary of the Company setting out,

(i) The provisions of Article V, Section 13 of the By-Laws, and
(ii) A copy of the power-of-attorney appointment, executed pursuant thereto, and
(iii) Certifying that said power-of-attorney appointment is in full force and effect,

the signature of the certifying officer may be by facsimile, and the seal of the Company may be a facsimile thereof."

I, Boh A. Dickey, Secretary of SAFECO INSURANCE COMPANY OF AMERICA, do hereby certify that the foregoing extracts of the By-Laws and of a Resolution of the Board of Directors of this corporation, and of a Power of Attorney issued pursuant thereto, are true and correct, and that both the By-Laws, the Resolution and the Power of Attorney are still in full force and effect.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the facsimile seal of said corporation this 10th day of May, 19 90.

-MR FORM 5

UT0067
BOND

(Revised 1982)

CRANDALL CYN

RECEIVED
DEC 02 1982
DIVISION OF
OIL, GAS & MINING

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES AND ENERGY
DIVISION OF OIL, GAS AND MINING
4241 State Office Building
Salt Lake City, Utah 84114

THE MINED LANDS RECLAMATION ACT

Bond No. ULI 880681

BOND

KNOW ALL MEN BY THESE PRESENCE, that the undersigned Genwal Coal Co., Inc. as principal, and Northwestern National Insurance Co as surety, are held and firmly bound unto the State of Utah, Division of Oil, Gas and Mining, and the U. S. Department of the Interior, Office of Surface Mining in the penal sum of One Hundred Thrity Six Thousand Seven Hundred Twenty Nine and No/100----- dollars ($ 136,729.00--------) for the payment of which sum, will and truly be made, we hereby jointly and severally bind ourselves, our heirs, administrators, executors, successors and assigns.

Delete

THE CONDITION OF THE ABOVE OBLIGATION IS SUCH that whereas the above named principal did on the 17th day of December, 19 80 file with the Division of Oil, Gas and Mining a "Notice of Intention to Commence Mining Operations and Mining and Reclamation Plan," to secure authorization to engage in mining operations in the State of Utah, under the terms and provisions of the Mined Land Reclamation Act; that in said Notice the principal estimated that 9.7 acres of land will be affected by mining. Said land is described as follows in Exhibit "A" attached hereto.

NOW, if the said principal shall satisfactorily reclaim the above-mentioned lands affected by mining by said principal in accordance with the Mining and Reclamation Plan and shall faithfully perform all requirements of the Mined Land Reclamation Act, and comply with the Rules and Regulations adopted in accordance therewith, then this obligation shall be void; otherwise it shall remain in full force and effect until the reclamation is completed as outlined in the approved Mining and Reclamation Plan.

If the said approved plan provides for reclamation of the land affected on a piecemeal or cyclic basis, and said land is reclaimed in accordance with such plan, then this bond may be reduced periodically.

In the converse, if the said plan provides for a gradual increase in the area of the land affected or increased reclamation work, then this bond may accordingly be increased with the written approval of the surety company.

NOTE: Where one signs by virtue of Power of Attorney for a surety company, such Power of Attorney must be filed with this bond. If the principal is a corporation, the bond shall be executed by its duly authorized officers with the seal of the corporation affixed.

Genwal Coal Co., Inc.
Principal (Company)

Date: December 2, 1982 By: William C. Waller, V.P.
Company Official - Position

Northwestern National Insurance Co.
Surety (Company)

Date: December 2, 1982 By: Thomas J. Brough
Official of Surety - Position
Thomas J. Brough - Attorney-in-Fact

NORTHWESTERN NATIONAL INSURANCE COMPANY
OF MILWAUKEE, WISCONSIN
A STOCK COMPANY

POWER OF ATTORNEY

KNOW ALL MEN BY THESE PRESENTS, That NORTHWESTERN NATIONAL INSURANCE COMPANY OF MILWAUKEE, WISCONSIN, a Wisconsin corporation, does hereby make, constitute and appoint

----------Thomas J. Brough of Salt Lake City, Utah ----------

its true and lawful Attorney(s)-in-Fact, with full power and authority for and on behalf of the company as surety, to execute and deliver and affix the seal of the company thereto if a seal is required, bonds, undertakings, recognizances or other written obligations in the nature thereof, as follows:

----------Any and all bonds, undertakings, recognizances or other written obligations in the nature thereof ---------

and to bind NORTHWESTERN NATIONAL INSURANCE COMPANY OF MILWAUKEE, WISCONSIN thereby, and all of the acts of said Attorneys-in-Fact, pursuant to these presents, are hereby ratified and confirmed. This appointment is made under and by authority of the following provisions of the By-Laws of the company, which are now in full force and effect:

Article II, Section 1. The business and property of the company shall be managed and controlled by the board of directors.

Article III, Section 1. ...The board of directors may appoint additional officers and agents to perform such duties as may be assigned by the board of directors.

This Power of Attorney is signed and sealed by facsimile under and by the authority of the following resolutions adopted by the board of directors of the NORTHWESTERN NATIONAL INSURANCE COMPANY OF MILWAUKEE, WISCONSIN at a meeting duly held on May 14, 1963.

RESOLVED that the president, any vice-president or assistant vice-president, in conjunction with the secretary or any assistant secretary, may appoint attorneys-in-fact or agents with authority as defined or limited in the instrument evidencing the appointment in each case, for and on behalf of the company to execute and deliver and affix the seal of the company to bonds, undertakings, recognizances, and suretyship obligations of all kinds; and said officers may remove any such attorney-in-fact or agent and revoke any power of attorney previously granted to such person.

RESOLVED FURTHER that any bond, undertaking, recognizance, or suretyship obligation shall be valid and binding upon the company

(i) when signed by the president, any vice-president or assistant vice-president, and attested and sealed (if a seal be required) by any secretary or assistant secretary; or

(ii) when signed by the president, any vice-president or assistant vice-president, secretary or assistant secretary, and countersigned and sealed (if a seal be required) by a duly authorized attorney-in-fact or agent; or

(iii) when duly executed and sealed (if a seal be required) by one or more attorneys-in-fact or agents pursuant to and within the limits of the authority evidenced by the power of attorney issued by the company to such person or persons.

RESOLVED FURTHER that the signature of any authorized officer and the seal of the company may be affixed by facsimile to any power of attorney or certification thereof authorizing the execution and delivery of any bond, undertaking, recognizance, or other suretyship obligations of the company; and such signature and seal when so used shall have the same force and effect as though manually affixed.

IN WITNESS WHEREOF, NORTHWESTERN NATIONAL INSURANCE COMPANY OF MILWAUKEE, WISCONSIN has caused these presents to be signed by its proper officer, and its corporate seal to be hereunto affixed this 25th day of April 1977.

NORTHWESTERN NATIONAL INSURANCE COMPANY
OF MILWAUKEE, WISCONSIN

Donald L. Bowen
Vice President

Frank P. Welch
Ass't. Secretary

STATE OF WISCONSIN, COUNTY OF MILWAUKEE–ss

On this 25th day of April A.D., 19 77, personally came before me, Donald L. Bowen and Frank P. Welch, to me known to be the individuals and officers of the NORTHWESTERN NATIONAL INSURANCE COMPANY OF MILWAUKEE, WISCONSIN, who executed the above instrument, and they each acknowledged the execution of the same, and being by me duly sworn, did severally depose and say: that they are the said officers of the corporation aforesaid, and that the seal affixed to the above instrument is the seal of the corporation, and that said corporate seal and their signatures as such officers were duly affixed and subscribed to the said instrument by the authority of the board of directors of said corporation.

Patricia A Mortag
Notary Public

My Commission Expires 12/18/77

STATE OF WISCONSIN, COUNTY OF MILWAUKEE–ss

CERTIFICATE

I, the undersigned, assistant secretary of the NORTHWESTERN NATIONAL INSURANCE COMPANY OF MILWAUKEE, WISCONSIN, a Wisconsin corporation, DO HEREBY CERTIFY that the foregoing and attached Power of Attorney remains in full force and has not been revoked; and furthermore, that the provisions of the By-Laws of the company and the Resolutions of the board of directors set forth in the Power of Attorney, are now in force.

Signed and sealed at the City of Milwaukee this 24th day of November, 19 82.

Alois J. Schmitt
Assistant Secretary
Alois J. Schmitt

11108 (12-70)

EXHIBIT A

Township 16 South, Range 7 East

Section 5: All that Part of the N 1/4 NW 1/4
SW 1/2 lying North of Crandall Creek

and

T. 16S, R.7E, SLM, Utah
Sec 5, SW 1/4 NW 1/4
Sec 6, SE 1/4 NE 1/4

Original to Fireproof Copy to #3.

FINDINGS

Genwal Coal Company
Crandall Canyon Mine
Federal Lease U-68082
ACT/015/032
Emery County, Utah

September 26, 1994

1. The revised plan and the permit application are complete and accurate and all requirements of the Surface Mining Control and Reclamation Act and the approved Utah State Program (the "Act") have been complied with. (See TA with Stipulations) (R645-300-133.100).

2. No additional surface reclamation is required since the additional permit area will be mined as an underground extension of the existing mine. There will be no new surface facilities (R645-300-133.710).

3. The assessment of the probable cumulative impacts of all anticipated coal mining and reclamation activities in the general area on the hydrologic balance has been conducted by the regulatory authority and no significant impacts were identified. The Mining and Reclamation Plan ('MRP') proposed under the application has been designed to prevent damage to the hydrologic balance in the permit area and in associated off-site areas (R645-300-133.400 and UCA 40-10-11 {2}{c}) (See July 15, 1994 Cumulative Hydrologic Impact Analysis for Crandall Canyon Mine ['CHIA']).

4. The proposed lands to be included within the permit area are:

   a. not included within an area designated unsuitable for underground coal mining operations (R645-300-133.220);

   b. not within an area under study for designated lands unsuitable for underground coal mining operations (R645-300-133.210) ;

   c. not on any lands subject to the prohibitions or limitations of 30 CFR 761.11 {a} (national parks, etc.), 761.11 {f} (public buildings, etc.) and 761.11 {g} (cemeteries);

   d. not within 100 feet of the outside right-of-way of a public road (R645-300-133.220);

   e. not within 300 feet of any occupied dwelling (R645-300-133-220).

5. The regulatory authority's issuance of a permit is in compliance with the National Historic Preservation Act and implementing regulations (36 CFR 800) See attached letter from State Historic Preservation Officer ('SHPO') dated May 26, 1994. (R645-300-133.600)

6. The applicant has the legal right to enter and complete mining activities in the IBC through a federal coal lease issued by the Bureau of Land Management (See attached lease U-68082 effective March 1, 1994). (R645-300-133.300).

7. A 510(c) report has been run on the Applicant Violator System ('AVS'), which shows that: prior violations of applicable laws and regulations have been corrected; neither Genwal Coal Company, or any affiliated company, are delinquent in payment of fees for the Abandoned Mine Reclamation Fund; and the applicant does not control and has not controlled mining operations with demonstrated pattern of willful violations of the Act of such nature, duration, and with such resulting irreparable damage to the environment as to indicate an intent not to comply with the provisions of the Act, see memo to file dated September 26, 1994. (R645-300-133.730).

8. Underground mining operations to be performed under the permit will not be inconsistent with other operations anticipated to be performed in areas adjacent to the proposed permit area. There are no other mines immediately adjacent to the Crandall Canyon Mine.

9. The applicant has posted a surety bond for the Crandall Canyon Mine in the amount of $703,000.00. No additional surety will be required, since there is no additional surface disturbance proposed. (R645-300-134)

10. No lands designated as prime farmlands or alluvial valley floors occur on the permit area (R645-302-313.100) (R645-302-321.100)

11. The proposed postmining land-use of the permit area is the same as the pre-mining land use and has been approved by the regulatory authority and the surface land management agency.

12. The regulatory authority has made all specific approvals required by the Act, the Cooperative Agreement, and the Federal Lands Program.

13. The proposed operation will not affect the continued existence of any threatened or endangered species or result in the destruction or adverse modification of their critical habitats. See concurrence letter from US Fish and Wildlife Service dated July 6, 1994. (R645-300-133.500)

14. All procedures for public participation required by the Act, and the approved Utah State Program are in compliance. See Affidavit of Publication dated May 31, 1994. (R645-300-120)

15. No existing structures will be used or affected in conjunction with mining of the underground right-of-way, other than those constructed in compliance with the performance standards of R645-301. (R645-300-133.720)

Permit Supervisor

Permit Coordinator

Associate Director, Mining

Director